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SELF-EFFICACY DEVELOPMENT IN ADULT WORKERS HOLDING SALES POSITIONS: A PRETEST-POSTTEST CONTROL-GROUP EXPERIMENTAL TRAINING INTERVENTION STUDY

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SELF-EFFICACY DEVELOPMENT IN ADULT WORKERS HOLDING SALES POSITIONS: A PRETEST-POSTTEST CONTROL-GROUP EXPERIMENTAL TRAINING INTERVENTION STUDY

A DISSERTATION APPROVED FOR THE DEPARTMENT OF EDUCATIONAL PSYCHOLOGY

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Dedication

To younger me who started asking why and to current me who never stopped

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Abstract

Throughout self-efficacy research, it is acknowledged that self-efficacy has an impact on individual's occupation. There is, however, a gap in the literature investigating if the knowledge of self-efficacy as a content area influences salespeople's self-efficacy levels. This study evaluated a self-efficacy knowledge-based intervention's effectiveness in increasing salespeople's knowledge of self-efficacy while influencing their self-efficacy levels.

Grounded in Social Cognitive Theory, I developed a training intervention that taught self-efficacy as a concept. Both the experimental and comparison group completed a pretest, the intervention or comparison training, posttest 1 and a posttest 2 one week later. Participants included 57 business-to-business or business-to-consumer adult workers holding a sales role in the United States.

The results of the investigation found that the intervention increased knowledge of self-efficacy but did not increase self-efficacy levels, nor was self-efficacy knowledge a predictor of self-efficacy levels. Additionally, the study found that gender, level of sales experience, and age were significant factors in sales self-efficacy levels.

Chapter 1

Overview of the Study

Time spent in an occupation is a significant portion of one's life, influencing essential elements of livelihood such as social stature, socioeconomic status, location, and interpersonal relationships. Defined as one's belief about one's ability to successfully perform a specific task or domain (Bandura, 1977), self-efficacy (SE) impacts several components of an individual's life, such as their career (Bandura, 1977).

Research shows that the higher self-efficacy a person has, the higher their work performance will be (Frese et al., 1999); additionally, higher self-efficacy results in greater productivity (Jorde-Bloom & Ford, 1988), enhanced self-regulation (McDonald & Siegall, 1992), and increased self-reflection on work goals (Speier & Frese, 2014). The higher these elements are, the greater a person's occupational satisfaction.

Self-efficacy's impact on individuals has an influence on the organizations where people are employed, as well. The more efficacious an employee is, the better equipped they are to handle transactions and disputes (Leon-Perez et al., 2011), which can lead to better organizational customer service. Self-efficacy, alongside intrinsic motivation and job satisfaction, has been linked to increased performance and productivity (Olusola, 2011; Pan et al., 2011). Self-efficacy has also been positively linked with career commitment (Niu, 2010), which ultimately impacts employee performance and tenure (Ballout, 2009). Additionally, there is a link between self-efficacy and creativity (Ghafoor et al., 2011), which can lead to personal and organizational innovation and adaptation to challenges (Bandura, 2000).

Statement of the Problem

While it is acknowledged that self-efficacy has an impact on people's occupation, there is a gap in the literature on influencing self-efficacy in the adult workforce, as well as investigating if SE knowledge is a predictor of SE levels. Research has shown the necessity of self-efficacy, but interventions are rarely conducted in an adult learning context. Additionally, previous research generally focuses on increasing self-efficacy and not examining the knowledge of self-efficacy's impact on self-efficacy levels bidirectionally.

The purpose of this investigation is to evaluate a self-efficacy knowledge-based intervention's effectiveness in increasing salespeople's knowledge of self-efficacy while influencing their self-efficacy levels. In addition, this study examines the knowledge of self-efficacy and its prediction of self-efficacy levels. The intervention will consist of a virtual asynchronous training on the key tenets of self-efficacy, its application to the adult sales worker, and ways to utilize self-efficacy in a sales role. The study was an experimental training intervention study.

Research Questions

Established from the current research and by identifying gaps in the literature, several research questions have been derived. The first research question examines the self-efficacy levels of salespeople by demographics. The second research question focuses on the self-efficacy training intervention on the target population (adult workers holding a sales position) and investigates whether the intervention will have an effect on their self-efficacy levels. Similarly, the third research question aims to assess the intervention's influence on the knowledge of self-efficacy as a content area. The final research question is targeted to understand if the knowledge of SE serves as a predictor of change in the participants' SE levels. In essence, if they know about SE as a subject, does that change their SE levels? The research questions are stated below.

1. How is sales self-efficacy distributed among salespeople's age, gender, and experience level?
2. To what extent does a self-efficacy training intervention influence salespeople's self-efficacy?
3. To what extent does a self-efficacy training intervention influence the knowledge of self-efficacy?
4. To what extent does the knowledge of self-efficacy predict participants' self-efficacy levels?

Significance of the Study

There have been overwhelming amounts of studies stating that self-efficacy is an important, if not the most important, non-intellectual influence on academic performance (Richardson et al., 2012; Schneider & Preckel, 2017). Primarily, this has been interpreted as self-efficacy being a self-fulfilling prophecy (Pajares, 2002; Schunk & Pajares, 2004). However, as recognized by Bandura (1997), miscalibration between self-efficacy and actual ability happens and can have negative effects. Over-efficacious people may choose tasks that are beyond their abilities and fail, whereas under-efficacious people may choose tasks that are too easy and risk under developing their skills (Schunk & Pajares, 2004). Nevertheless, the majority of interventions are developed with the intention of increasing self-efficacy, which leaves a gap in research on interventions influencing self-efficacy, positively or negatively.

The salesforce sector of workplace training is often faced with heightened challenges compared to other industries. Sales-driven organizations often experience high staff turnover, impacting client relationships (Bendapudi & Leone, 2002) and organizational progress. In 2008, an estimated $15 billion was spent on salesforce training (Zoltners et al., 2008), which was

expected to increase with time. Sales skills have been categorized as complex and diverse, require nuance, and can be challenging to learn in traditional formal environments (Mallin et al., 2010), but SE has been shown to influence individuals' job pursuits and the development of skills (Bandura, 1997; Lent et al., 1994).

Definition of Terms

To ensure a comprehensive understanding of the dissertation, several key terms require definition.

Self-efficacy (SE): Bandura (1977) established self-efficacy as a key motivational construct in the Social Cognitive Theory. Following Bandura's definition, I define self-efficacy as a person's belief in their ability to reach performance outcomes. It is essential to note that self-efficacy is the *belief* and not the *actual* ability.

Self-efficacy Levels: In this dissertation, self-efficacy levels refer to the magnitude of an individual's belief in their ability to be successful in a domain-specific context. Self-efficacy levels form a continuum that ranges from high to low, with the strength varying for each individual (Bandura, 1977).

Self-efficacy Knowledge: Self-efficacy knowledge is defined in this study as an individual's understanding of self-efficacy as a subject matter. This differs from self-efficacy levels as it is a person's knowledge of self-efficacy as a concept, versus their belief in their own abilities.

Training: For this study, I define training as a learning program that is established from learning objectives and delivered to an audience of adult learners currently occupied in the workforce.

Organization of the Study

Throughout this dissertation, I continue to define and present key concepts in self-efficacy and then review, critique, and apply interventions conducted in education and healthcare

contexts. Chapter 2 contains a review of self-efficacy literature, consisting of Social Cognitive Theory, self-efficacy origins, interventions, and concludes with my research questions and hypotheses. In Chapter 3, I discuss why an experimental training intervention was chosen for the methodology, as well as detail the content of the intervention and comparison trainings and the nine-step study procedure. Chapter 4 presents the results of the descriptive statistics and mixed ANOVAs by research question. In Chapter 5, I interpret the statistics presented in Chapter 4 by discussing each research question while connecting it to previous research. I conclude with a list of references and appendices containing the instruments (SE level and SE knowledge) and materials (training content outlines).

Chapter Two
Background Literature

Self-efficacy (SE) is a well-acknowledged aspect of human motivation, regulation, and learning. Throughout the studies of SE, beginning in 1977 with Bandura, SE's influence is significant. Since its introduction, it has been empirically acknowledged as a fundamental motivational construct (Schunk & DiBenedetto, 2016). With individuals spending a significant amount of their lives in occupational roles, there has been an emphasis on the impact of self-efficacy in the workplace. Research shows a connection between self-efficacy, job performance, and occupational satisfaction (Jorde-Bloom & Ford, 1988; Judge & Bono, 2001; McDonald & Siegall, 1992). Day and Allen (2004) found a connection between career mentoring and job performance influenced by career motivation and career self-efficacy. Al-Eisa and colleagues (2009) identified a connection between motivation to learn, learning transfer, and self-efficacy.

In this literature review, I will begin by defining SE and briefly explaining its historical context and its position in Social Cognitive Theory. Next, I will detail how SE is developed and review the literature on SE interventions, including SE measurement. Through this, I will investigate the intervention research in PreK-12th grade, higher education, and healthcare domains in order to apply and critique them towards the adult workforce domain. I conclude by discussing the shortcomings in current literature and then provide the research questions and introduce hypotheses.

Social Cognitive Theory

Social cognitive theory (SCT) states that human functioning depends on three factors: personal, social/environmental, and behavioral (Bandura, 1986). Personal factors can consist of, but are not limited to, self-efficacy, cognition, and emotions. Social/environmental factors include the physical setting, other people or groups, and climate. Lastly, behavioral factors can

consist of skills and actions taken. The personal, social/environmental, and behavioral factors interact with and influence each other (Bandura, 1986).

A core tenet of social cognitive theory centers on an individual's desire for a sense of agency (Bandura, 1986). SCT states that people seek to believe they have a greater degree of control in their lives, which then leads them to exercise this belief in a multitude of ways, such as self-reflection, which influences their self-efficacy (Bandura, 1997). Bandura states that agency can be interacted with for an individual to evolve and grow (Bandura, 1986). SCT defines three vital psychological properties that allow individuals to exercise agency: forethought, self-reactiveness, and self-reflection (Bandura, 2023). Forethought is established by individuals employing future planning and goal setting to guide future states. Self-reactiveness is evident through people's self-regulation by responding to behaviors, influences, or events positively or negatively, depending on their standards. Self-reflection is one's ability to reflect on one's capabilities, thoughts, and actions in a past, current, and future state (Bandura, 2023). It is in the metacognitive state of self-reflection that self-efficacy beliefs are developed, and those beliefs, in turn, influence other self-regulated behaviors and psychological states.

Causal processes are broken into three frameworks: unidirectional, partially bidirectional, and triadic reciprocal (Bandura, 1983). Social cognitive theory posits that human agency is a triadic reciprocal causation, as human functioning is formed from the interactions between three influences: intrapersonal, behavioral, and environmental. Intrapersonal factors comprise cognitive, motivational, affective, and biological elements; behavioral determinants are actions taken; and environmental determinants consist of settings that are imposed, selected, or created (Bandura, 1983).

Social cognitive theory states that there are three modes of human agency: individual, proxy, and collective (Bandura, 1997). While the individual mode is studied more than the proxy and collective modes, all three are essential components of social cognitive theory. The individual form of agency is primarily influential in contexts where a person can exert sole control. The proxy form of agency consists of individuals influencing others who have the authority to affect a person's life. Collective agency is a more extensive form of human agency, referring to situations where whole groups are responsible for the outcomes and where there is a shared belief in the goal (Bandura, 2023).

Thus, as stated previously, self-efficacy is a component of SCT, with SCT serving as the overarching theory. I will focus on SE in the following sections.

Self-efficacy

At its core, self-efficacy is a person's belief in their ability to accomplish a desired outcome, affecting behavior, motivation, and the outcome (Bandura, 1997). SE research began with studies on changing phobic behavior, which found that individuals with severe phobias saw positive results from interacting with the object of their fear through a guided intervention (Bandura et al., 1977). These studies established the importance of structured experiences on behavior change and perceptions of capabilities. Additionally, they prompted the exploration of the influence of self-efficacy in different domains and the need to develop and facilitate self-efficacy. The seminal studies provided data to show that self-efficacy was based on a person's belief; however, the tasks on which the participants self-predicted their SE levels were identical to the actual task, creating a need to examine self-efficacy and self-efficacy development in a non-clinical context.

There are two types of self-efficacy: general and domain/task specific. General self-efficacy refers to one's overarching belief about capabilities across environments and domains, whereas domain self-efficacy limits an individual's belief in their ability to perform specific tasks (Bandura, 1997). General self-efficacy has been considered relatively fixed, whereas domain-specific self-efficacy is perceived as malleable through four sources of self-efficacy: mastery experience, vicarious experience, social persuasion, and physiological indexes (Bandura, 1997).

What Does SE Influence?

Bandura (2023) discusses that while self-efficacy is recognized as a monumental influence on human motivation, behavior, and performance, increasing self-efficacy does not make any of those items automatic. Instead, self-efficacy is a proximal determinant of various psychological processes: selection, cognitive, motivational, and affective.

Selection Processes

The selection process consists of a person's choices regarding the environments in which they desire to be. Self-efficacy will influence environmental selection by informing a person's decision in multiple ways, such as wanting to avoid domains in which they have low efficacy or stretching their skillset by picking something challenging. These determinants can influence a person's life and impact their growth and development (Betz & Hackett, 1986; Snyder, 1980). However, the stronger the belief, the more resilient a person will be in changing environments, whereas a weaker self-efficacy will have less resilience in changing environments (Kent, 1987).

Cognitive Processes

Self-efficacy is a proximal determinant of thought processes that enable individuals to expect outcomes and regulate themselves in order to have agency (Bandura, 2023). Individuals are required to draw on their previously gained knowledge to solve problems, make decisions,

and form opinions. People who have a firm belief in their complex cognitive thought processes tend to be more effective in complex decision-making, whereas those who hold low cognitive beliefs and low self-efficacy will be less effective when making complex decisions (Wood & Bandura, 1989). The stronger a person's self-efficacy is, the more ambitious goals they will establish and the stronger aspiration they will have to reach them (Locke et al., 1984; Taylor et al., 1984; Wood & Bandura, 1989).

Motivational Processes

Self-efficacy determines a person's motivation, effort exertion, and perseverance (Bandura, 2023). Those with higher self-efficacy will be more motivated, put forth more effort and time commitment, and persevere through adversity, which can lead to higher achievement (Locke et al., 1984; Taylor et al., 1984). Motivational processes are not only critical for current tasks or domains but also influence one's feelings of success for future endeavors, which can influence mastery experiences, or an individual's direct experience with a task (Bandura, 2023).

Affective Processes

Self-efficacy beliefs influence the impacts and levels of affective states (Bandura, 2023). Emotional reactions can influence outcomes as affective states impact cognitive and emotional states (Bandura, 2023). Lower self-efficacy can lead to more personal stress and feelings of environmental threats. Severe affective states can also impact physiological states, such as increasing heart rates (Bandura, 2023).

What Influences SE?

Self-efficacy is a malleable form of self-belief that can be influenced by four sources. While there are a multitude of intervention types developed to increase self-efficacy and achievement, they can be generalized into one of the four efficacy information sources.

Mastery Experiences

Mastery experiences are prior experiences that develop a resilient self-efficacy belief (Bandura, 2023). Bandura (1997) stated that mastery experiences are "the most effective source of self-efficacy information because they provide the most authentic evidence of whether one can master whatever it takes to succeed" (p. 80). Individuals' beliefs and actions reinforce each other, which suggests an upward spiral between self-efficacy and mastery experiences (Wood & Bandura, 1989). Meta-analyses have shown that while both reinforce each other, there is stronger evidence for previous actions forming an individual's self-efficacy versus self-efficacy predicting future actions (Sitzman & Yeo, 2013; Talsma et al., 2018).

Vicarious Experiences

Vicarious experiences consist of an individual observing other people completing a task, which can develop one's self-efficacy in their ability to complete the task successfully. Additionally, the observation allows individuals to learn effective strategies and develop the necessary skills to complete the task (Bandura, 1997). When individuals can identify with the person modeling the task through factors such as age and gender (Schunk, 1987) or similar capability levels and positive outcomes (Bandura, 1977), there is a greater increase in self-efficacy.

Social Persuasion

Social persuasion is another form of self-efficacy; however, even with credible social persuaders, mastery experiences will overpower the social persuasion. Social persuasion will be more impactful when paired with mastery or vicarious experiences. Social, or verbal, persuasion includes encouragement from others on their capability to complete a task. Bandura (1997) stated that social persuasion is generally the weakest source of self-efficacy because if a person already

has a strong belief, especially one developed from negative past experiences, social persuasion requires more finesse. There is a higher chance of social persuasion increasing self-efficacy if the persuading individual is seen as an expert or has succeeded in the domain in which self-efficacy is being built (Bandura, 2023). The more individuals enact the social persuasion and are deemed competent in their domain, the higher the likelihood of the social persuasion being successful (Bandura, 2023). Social persuasion is a delicate source of self-efficacy, as its effectiveness is impacted significantly by experiences. Combining the persuasion with a successful experience can increase self-efficacy, but if the experience is unsuccessful, it will contradict the social persuasion and ultimately decrease the individual's confidence (Bandura, 1977).

Physiological and Affective States

Physiological and affective states can also influence self-efficacy. Physiological states are more prone to influence SE in tasks that are physical performance-based (Bandura, 1997). If an individual's task is to run a marathon, somatic indices such as increased heart rate, fatigue, or windedness can be perceived as indicators of their physical inefficacy.

Affective states are more widely influenced by a variety of tasks and domains. Individuals are prone to drawing positive conclusions about their self-efficacy if they are in a positive mood. In contrast, they will trend toward negative perceptions of their SE if they are in a negative mood or experiencing negative emotions (Bandura, 1997). Furthermore, mood bias can influence a mastery experience's power to change SE level, with successes that occurred during a positive mood being more influential than those that occurred during a negative mood (Wright & Mischel, 1982). These emotional arousal and somatic states are highly interpretable by everyone, with the different emotions and somatic states being interpreted in different ways (Bandura, 2023).

Distinguishing Self-efficacy from Similar Constructs

Self-efficacy is often confused with similar constructs, but varies significantly from self-perspectives, ability, optimism, and outcome expectancies. The nature of task-specific self-efficacy provides insight into its differentiation from other self-perspectives, such as confidence and self-esteem. Confidence is an overarching feeling of being successful or not (Compte & Postlewaite, 2004), whereas individuals can have differing levels of self-efficacy based on specific tasks (Bandura, 1997).

While similar, optimism is the belief that a person's future will be successful (Carver & Scheier, 2001), whereas self-efficacy is the belief in successfully mastering a specific task (Bandura, 1997). Optimism does not have to be solely internal; instead, it can result from circumstances or chance (Scheier et al., 2001). Individuals high in self-efficacy, though, believe that their future is determined by their own actions (Bandura, 1997). Outcome expectancies and self-efficacy are both components of social cognitive theory (Bandura, 1997); however, they differ in one key element. Outcome expectancies are an individual's perception of the consequences of a behavior (Bandura, 2001), whereas self-efficacy emphasizes a person's control over achieving the behavior (Bandura, 2023).

Self-efficacy is one's belief in one's ability but differs from one's actual ability (Bandura, 1997). Ability refers to a person's skills that provide the competence needed to complete the tasks successfully. Actual ability does not need to be high for a person's self-efficacy to be developed, as self-efficacy can be built from generalizing related tasks and how they were completed (Bandura, 1977).

Self-efficacy Research

Self-efficacy research began in a clinical context to determine the role of motivation in severe phobias. Bandura et al. (1977) conducted an experimental study that involved administering a pretest to assess the effect of intensifying interactions with a snake and subsequently assessing self-efficacy levels. The self-efficacy assessment focused on individual tasks, and the participants rated their aptitude for completing the tasks and their certainty of performing those tasks. Then both rankings were completed again, but with a different breed of snake. Afterward, participants were assigned to one of three different experimental conditions: participant modeling, modeling, and control. The participant modeling included the participant observing a model, receiving performance aids, which were then slowly removed until the participant had completed all the tasks. The modeling group observed another person complete the tasks successfully, but did not participate on their own. The control group received assessments only. The results showed that the most significant gain in self-efficacy was through participant modeling. Still, the modeling-only group also saw an increase in self-efficacy compared to the control group. This showcased evidence that what is now referred to as mastery experience is the most impactful source of self-efficacy development.

Bandura and Adams (1977) built upon the first study by having the snake-phobia participants receive participant modeling until they accomplished all tasks. The behavioral post-test showed that participants were split between being unable to perform the tasks completed during treatment, slightly increasing performance levels, and others improving significantly.

These studies also highlighted several other key elements of self-efficacy research. First, self-efficacy was about belief, versus actual ability. Second, these studies were based on the performance of overcoming new fears, which is focused on improvement in the same tasks, versus the self-efficacy of learning new tasks. Lastly, these studies prompted a need to examine

contextual factors and other variables, as all participants had received the same treatment, but the results varied, particularly in the second study.

Contextual Influences

Usher & Schunk (2017) demonstrated that contextual variables can influence the process of forming self-efficacy beliefs. Additional research has shown that individuals have different preferences regarding the sources of self-efficacy and that the context can alter the assessment of the importance of specific sources (Usher & Pajares, 2008). The sources of self-efficacy themselves do not automatically draw efforts from individuals; it is a person's perceptions and interpretations of those sources that determine their actions and/or beliefs. Additionally, when multiple sources influence self-efficacy, they can impact somebody's ability to weigh and use the information, but likely in a negative way (Usher & Pajares, 2008).

Studies have shown that in certain contexts, such as mathematics, mastery experiences influence boys more than girls, while they have less anxiety than girls (Usher & Pajares, 2008); however, the opposite is true for writing. Research has also shown that in comparison studies of students with special needs versus those without, the students with special needs generally had lower self-efficacy, internalized failures, and lower achievement levels (Heward et al., 2017; Major et al., 2013). These results are found across grade levels, achievement scores, and gender identity (Lackaye et al., 2006). Another critical context is culture, which has been shown to influence self-efficacy (McInerney & King, 2018). It is known that people from individualistic cultures (e.g U.S. and Western Europe) tend to report higher self-efficacy than those from collectivistic cultures (e.g. Asia), including when the performance levels are the same (Klassen, 2004).

While self-efficacy spans across different contexts, variables within those contexts impact self-efficacy. Due to this, it is essential to examine self-efficacy across adult learning contexts to expand the literature and practice of developing adults' self-efficacy. Self-efficacy research has generally taken two paths. The first is correlational studies between self-efficacy and what influences self-efficacy or what self-efficacy influences. The second is primarily experimental studies in which interventions are tested to see the impact of self-efficacy, achievement, or other variables. The following sections focus on the latter path, experimental intervention studies in education (PreK-12 and Higher Education) and healthcare domains, while discussing the findings and their application to the adult workforce.

Education

Much of the research on self-efficacy development and facilitation is situated in educational contexts. The advancement of self-efficacy research in the field of education was essential for understanding self-efficacy in domains other than clinical psychology because it consists of more complex environmental/social, and behavioral influences (Talsma et al., 2018). In a clinical context, the environment is controlled, and the behaviors are straightforward tasks. In an educational context, the environment is semi-controlled or lacks control(s), with extensive social components. Other environmental influences in an educational context include the applications of different learning methodologies and principles. Additionally, the behaviors can require more advanced knowledge structures, such as problem-solving and application (Schunk & DiBenedetto, 2021).

Higher education and PreK-12 contexts are similar in that transfer of knowledge and outcome results both impact self-efficacy (Schneider & Preckel, 2017), but differ in the fact that higher education students are provided with advanced knowledge in specific subject domains,

whereas PreK-12 settings are more broadly focused (Schneider & Preckel, 2017). Due to this, the domain of education must be divided into PreK-12 and higher education.

PreK-12

The first study to apply self-efficacy development to education involved children with low long-division achievement scores who were assigned to one of two conditions. The study found that students in the modeling group had higher achievement, persistence, and self-efficacy results than those in the control group (Schunk, 1981). This study confirmed that teacher and peer modeling can increase self-efficacy in an educational context, which correlates with Bandura's (1981) vicarious experience source of self-efficacy. Schunk's (1981) study prompted a larger examination of self-efficacy's influence in education and what interventions can be implemented to increase self-efficacy.

Much of the focus on SE in PreK-12th-grade student interventions is on vicarious experiences through modeling or social persuasion. Modeling can also be described as a vicarious experience that is heavily documented as a source of self-efficacy (Bandura, 1997). Multiple early studies in elementary education showed an increase in self-efficacy through modeling (Relich et al., 1986; Schunk & Hanson, 1985, 1989; Schunk et al., 1987; Zimmerman & Ringle, 1981), but specific interventions that were developed and tested combined vicarious experience with modeling by requiring students to watch a previously recorded video and then conduct a mock session based on that video. The study showed that the vicarious experience increased or decreased self-efficacy based on the student's achievement level; however, the modeling component consistently raised self-efficacy regardless of the student's performance.

It is paramount to note that these studies were limited to young children and teenagers, which diminishes the findings' applicability to adult populations. Young persons' self-efficacy

differs greatly from that of young adults and adults, which is important to consider when applying findings from PreK-12 education contexts. Children tend to have stronger self-efficacy when they determine their ability generally, versus task-specific (Muenks et al., 2018).

Social persuasion in the form of feedback was shown to increase self-efficacy as well. One study provided "bogus" feedback to a task but still showed a significant increase in the students' self-efficacy, whereas the actual task experience did not seem to influence self-efficacy as much (Daniels & Larson, 2001). The students were labeled as novices, which provides reason to further study the impacts of sources of self-efficacy on different levels of expertise. A study of elementary students investigated the effect of engaging children to interact with adults and peers, which showed an increase in self-efficacy (Girolametto et al., 2004) as well as the impact of social persuasion on improving language skills achievement and self-efficacy (Kashinath et al., 2006; Romano & Woods, 2017).

In the case of adult workforce training interventions, specifically this study, the emphasis is on understanding domain and task self-efficacy. This limits the transferability of the social persuasion interventions' results on children's general SE. Children begin to view their abilities more complexly and across domains around the age of thirteen (Muenks et al., 2018). Self-efficacy is thought to stabilize as individuals age, with the notion that it stabilizes the most in middle age (Oettingen & Gollwitzer, 2015).

While all interventions were successful in elevating self-efficacy, the most significant interventions combined multiple components that fostered the four sources of self-efficacy but lacked data to provide insights into which of the components were most impactful.

There were demographic limitations with these studies, potentially restricting their applicability across cultures, genders, and races. These studies were primarily completed in the

United States, with a significant portion of the participants being white females. As discussed previously, self-efficacy is influenced by cultures (McInerney & King, 2018), specifically in individualistic and collectivistic cultures (Klassen, 2004). Further, research has also shown gender differences in self-efficacy (Usher & Pajares, 2008), which is a limitation of the above studies.

Higher Education

Higher education research has built upon the research and interventions developed in a PreK-12 setting, but tailored to an older audience. Students at universities have a more stabilized self-efficacy than in PreK-12, but generally have not stabilized completely (Oettingen & Gollwitzer, 2015). Higher education institutions are typically more diverse than PreK-12 classrooms, but can consist of homogeneous groups within majors or classes. Higher education interventions have veered toward emphasizing mastery or vicarious experiences, particularly seen in pre-service majors (teachers, counselors, and healthcare).

First-year undergraduates in a computer programming course took an achievement test with the experimental group, then used a computer software program to identify misconceptions with the ability to take remedial learning, whereas the control group only received their test. The intervention group showed a significant increase in self-efficacy, while the control group did not (Chen et al., 2011). Also using computer software, Kim and colleagues (2007) conducted a concept map activity with guided exercises versus no additional guidance, leading to an increase in SE levels. Similarly, third-year undergraduates in a management information systems major were found to have an increase in self-efficacy when using an e-learning guide with knowledge maps versus one without knowledge maps (Shaw, 2010). These studies provided their

interventions asynchronously and virtually, which demonstrated the potential that an intervention with the same attributes can have.

Cheung et al. (2003) developed an intervention based on mastery experience and vicarious experience sources by having participants view a lecture, use guided software, and ultimately complete a design task, which saw an increase in self-efficacy. Teacher education programs often provide mastery experiences with semester-long teacher practicums (Gunning & Mensah, 2011; McDonnough & Matkins, 2010), which allow opportunities for skill development (e.g., lesson planning), social persuasions in the form of peer conversations and reflections (Brand & Wilkins, 2007; Rice & Roychoudhury, 2003). Larson and colleagues (1999) combined mastery experience elements and vicarious experiences by having students watch a model complete the task and then allow them to perform the task themselves, while increasing self-efficacy. Gurvitch and Metzler (2009) found significant increases in self-efficacy in the treatment groups that were able to gain authentic experiences versus control groups who did not. This finding is further supported by additional studies that allowed students to have an authentic experience and instructor feedback (Al-Darmaki, 2004; Barbee et al., 2003; Dempsey et al., 2009; Papastergiou, 2010).

While the combination of multiple sources of SE can be beneficial, the replicability and feasibility of an approach such as this in the workforce is difficult. These studies occurred over a longer period of time with a dedicated, hands-on instructor, which is more challenging to do in a workforce setting. Additionally, they emphasized that interventions with specific mastery experiences tied to the domain increase SE, but they can be difficult to replicate in other domains or with different audiences.

With a focus on vicarious experiences, a study focusing on international students enrolled in a bridge program within STEM-based programs, presenting a research seminar, self-efficacy was significantly increased in both intervention groups, who were shown a video presentation by either a senior academic staff member or a previous program participant. However, the peer model was more successful than the staff member (Adams, 2004). Similarly, another intervention combined goal setting and vicarious learning for pre-service teachers' self-efficacy regarding technology use. The vicarious learning, or modeling, consisted of observing a person to whom the participants related (a senior teacher) complete the task on which their self-efficacy was being measured (Wang et al., 2004).

Govaere et al. (2012) developed an intervention where fifth-year veterinary students were placed in groups that provided a topic-specific DVD and were either guided in the classroom, watched a guided DVD independently, or viewed the DVD independently without guidance. All groups with social interaction with peers and lecturers, the guided DVD, or both had self-efficacy increases, whereas the other group did not. Another intervention with undergraduate participants who witnessed a model display coping strategies when problem-solving or a model who portrayed problem-solving, with both groups receiving feedback, saw increased self-efficacy (Zimmerman & Kitsantas, 2002).

These studies have confirmed the benefit of providing vicarious experience opportunities to learners and the potential for combining different sources of SE on adult learners' self-efficacy, but lack the applicability to the workforce. With these studies being conducted in the formal educational domain, the demographics and characteristics of the participants are different from those in the adult workforce. While many of these interventions can be applied to the adult learning domain, there are factors that may need adjusting due to the nature of adult learning.

Workforce learning and training can differ extensively from formalized higher education settings, with the goals of workforce training generally being to increase performance, whereas higher education has a focus on increasing knowledge.

In their intervention, Zimmerman and Kitsantas (2002) increased self-efficacy by including a social persuasion component where students were provided positive feedback on their strategy and problem-solving processes. Govaere et al. (2012) also added a feedback component to the vicarious experience, which led to an increase in self-efficacy. In an intervention combining an online tool aimed at building preservice teachers' skills in reviewing writing assignments and expert feedback, the researchers found an increase in skills and self-efficacy (Dempsey et al., 2009). These findings were congruent with studies combining mastery and/or vicarious experiences with instructor feedback (Al-Darmaki, 2004; Barbee et al., 2003; Papastergiou, 2010).

Most commonly, social persuasion takes the form of instructor feedback. Social persuasion is generally limited in its effect on self-efficacy (Bandura, 1997), but can strengthen their beliefs if the persuasion is from someone individuals perceive as a model and is a show of faith in the individual's capabilities (Bandura, 1997). While social persuasion can be implemented in workplace SE development, it can be more challenging than implementing in a formal educational setting due to the availability and capabilities of mentors or leaders. These interventions were combined with a stronger source of efficacy as well as social persuasion.

Zimmerman and Kitsantas (2002) found an increase in self-efficacy when participants saw a model display coping strategies. First-year psychology undergraduates participated in a voluntary program focused on developing study skills through positive psychology sessions on understanding their character strengths, reflecting on those strengths and how to implement

them, and then revisiting their strengths. They saw an increase in self-efficacy (Macaskill & Denovan, 2013).

While the higher education population was more diverse than PreK-12, the studies mostly consisted of homogeneous groups in each study. In the pre-service teachers' studies, the participants were overwhelmingly white females. A few studies acknowledged results that could be influenced by the participants being novices, but these were speculations rather than facts. Further research is needed to determine the level of influence the sources of self-efficacy have on the varying levels of expertise.

Lastly, the studies are heavily focused on increasing SE through different modalities or intervention types, which lack in-depth review or discussion of whether the increase in SE influences performance.

Higher education interventions can be applied to the adult workforce in several ways. First, higher education studies included a variety of domains ranging from education (Wang et al., 2004) to STEM degrees (Govare et al., 2012). The diversity in cognitive domains reflects the different domains seen in the adult workforce. Higher education has a stronger focus on career readiness than PreK-12, which leads to a closer closeness to the adult workforce setting. Additionally, the types of interventions expanded to online and asynchronous settings, which is a learning often seen in adult learning and development programs. The majority of PreK-12 and most of Higher Education studies occur over a semester during in-person class times; however, a few interventions used a computer-based approach in intervention modality (Chen, 2011; Kim et al., 2007; Shaw, 2010), which is more representative of the learning programs adult workforce learners will see.

Healthcare

For decades, the healthcare field has understood that self-efficacy is an influential indicator of different health behaviors. Sallis et al. (1986) found that self-efficacy is predictive of individuals assuming and maintaining physical activity, and there have been studies that found that self-efficacy influences people limiting alcohol use (Oei & Burrow, 2000), stopping smoking (Baldwin et al., 2006), and using birth control (Hendriksen et al., 2007). However, the most commonly studied subgroup of healthcare is the self-efficacy of physical activity.

There has been data to show that there is a positive association between self-efficacy and physical activity outcomes (Anderson-Bill et al., 2011; Bauman et al., 2012). Due to this, self-efficacy has been a key element applied in interventions aimed to increase physical activity in a variety of populations (Myers et al., 2020). One wide-scale study was the Well-Being and Physical Activity (WBPA), which included the Fun for Wellness intervention, which provided a large-scale examination of self-efficacy interventions in an online format.

In their study, Myers et al. (2020) investigated the effectiveness of the Fun for Wellness (FFW) intervention, which was a component of the Well-Being and Physical Activity (WBPA) study, which targeted promoting physical activity for adults with obesity. The WBPA focused on two forms of self-efficacy: self-efficacy for different levels of physical activity and self-efficacy for regulating physical activity. The FFW intervention was an online format that targeted the four sources of self-efficacy through 152 different interactive scenario-based challenges. The study found that the intervention increased self-efficacy to regulate physical activity but failed to directly influence an increase in physical activity.

While the FFW Intervention study provides valuable insight, there are also several limitations. First, with the study being solely quantitative, there is a missing explanation as to why the intervention increased self-efficacy but did not increase physical activity. Second,

almost all data collected was self-reported. While the online program collected interaction data, all self-efficacy and physical activity levels were self-reported. Future studies would benefit from adding objective measures. However, this study makes a case for the potential for effective online interventions targeted to adults but highlights the need for objective measurements.

Mastery experiences and vicarious experiences have been shown to increase self-efficacy in physical activity (Ashford et al., 2010), with a study researching older adults finding that the absence of vicarious experiences from role models created blockages for participating in recurring physical activity (Allender et al., 2006). The third source, verbal persuasion, has been shown not to increase physical activity self-efficacy and, in some cases, even negatively impact it (Ashford et al., 2010) unless it is partnered with mastery experience (Wise & Trunnell, 2001). However, in other healthcare contexts, credible sources, such as qualified health professionals, are the most effective form of verbal persuasion in the health field (Perloff, 1993). Stress-management techniques have been used to build self-efficacy for a healthier diet by addressing the influences of psychological indexes (Prestwich et al., 2014).

Research in all domains has consistently shown the effectiveness of interventions on increasing SE; however, a significant gap is whether the knowledge of SE as a subject mediates SE levels. As seen in Myers et al. (2020) intervention, there was an increase in SE, but there was no increase in application. Within workforce learning, an increase in SE without an increase in performance levels or a show of long-term benefits would result in a lack of value for the organization. These studies in healthcare are focused on the patients versus the organization, which results in different focuses.

These studies and interventions provide valuable insight; however, the data is captured using scales specifically tailored to physical education. While this works for physical education

research, self-efficacy scales should be tailored to the domain being studied (Feltz & Chase, 1998; Myers & Feltz, 2007), which necessitates implementing scales specific to the workplace. These studies take place outside of a workforce context, which is a different setting from individuals building self-efficacy in a career. The motivations for increasing physical activity differ from those for increasing job skills. Physical activity is tied to health, a more internal motivation, whereas job performance is more closely tied to external motivators. Several studies showed that an increase in self-efficacy did not always correlate with an increase in physical activity (Olander et al., 2013), which needs to be explored to understand if this is a domain-specific finding or specific to that source of self-efficacy.

Self-efficacy and the Workforce

A noteworthy portion of an adult's life is spent in an occupational role, which not only provides the means for living but also has an influence on almost all aspects of life. Due to this, early research expanded on Bandura's seminal studies to determine if self-efficacy would influence the adult workforce. Initial studies found that personal efficacy influences a person's job pursuits and skills development (Bandura, 1997; Lent et al., 1994). Follow-up studies indicated that self-efficacy influenced personal career development. By regulating their roles and processes, high self-efficacy workers influenced their occupational satisfaction and productivity (Jorde-Bloom & Ford, 1988; McDonald & Siegall, 1992). High self-efficacy was also connected to a higher innovative nature and provided individuals with a higher sense of perseverance during the instability of innovation. This then successfully predicted that individuals with higher entrepreneurship prowess would be more likely to develop new businesses (Chen et al., 1998; Markman & Baron, 2003).

While the above research shows that self-efficacy can increase occupational capabilities and outlooks, it can also provide a predictive nature of overall health. A person with higher self-efficacy will be less emotionally and physiologically stressed in the face of occupational demands. Conversely, a person with low self-efficacy will see the stressful workload overpower their previous coping mechanisms and experience negative emotional and physiological impacts (Jex & Bliese, 1999).

Self-efficacy not only influences individuals, but organizations can also notice the positive effects of their workforce's self-efficacy. As mentioned above, the higher self-efficacy someone has, the more predictions can be made about their level of innovation (Chen et al., 1998; Markman & Baron, 2003). Similarly, if the collective self-efficacy in an organization is high, then the organization will be more likely to innovate and better adapt to changes (Bandura, 2000a). As Staples et al. found in 1998, higher self-efficacy fosters positive attitudes toward remote work as well as increases the remote workers' overall group achievement. While the study was relevant in 1998, in today's global, technologically advanced, and post-pandemic world, fostering higher performance, positive attitudes toward remote work, and innovation is critical, and the study may be even more relevant today.

The body of research discussed previously in this section, while comprehensive, has several deficits. First, the majority of studies cited are dated, which results in a lack of understanding of the influences of the present day. Second, different demographics were not examined despite the understood importance of personal and environmental influences on self-efficacy.

Growth Mindset Interventions

Similar to self-efficacy, there is a general belief that growth mindsets have positive impacts in educational settings (Bostwick et al., 2017; Haimovitz et al., 2011), and interventions should be implemented. Growth mindset interventions have been extensively studied in the past two decades with ever-increasing popularity (Dweck & Yeager, 2019). Interventions teaching about mindsets have shown significant results on academic achievement with a one-shot, asynchronous training (Paunesku et al., 2015; Yeager et al., 2019). Closely, Burnette et al. (2018) conducted a randomized control trial study with a 45-minute online module with 222 adolescent girls, which did not see an increase in academic achievement; however, the experimental group saw an increase in their growth mindset not only in an immediate posttest, but in a 4-month follow-up assessment. These interventions follow a similar structure of providing information on the research of growth-mindset, and then proceed with a general empowering message of growth mindset being malleable (Aronson et al., 2002; Paunesku et al., 2015).

Both self-efficacy and mindsets comprise an individual's self-beliefs that inform their approaches to difficult or challenging situations, are malleable, and utilize feedback to inform their future goals (Bandura, 2000a; Dweck, 2008). Those with a fixed mindset demonstrate similar actions as those with low self-efficacy: disengage, become discouraged, and doubt their ability to succeed (Bandura, 2000a; Dweck, 2008). Although separate beliefs, their similarities argue for the transferability of growth mindset's effective intervention development onto this study's intervention design. Based on this literature, the intervention was developed as a short, online module that discusses self-efficacy research and its malleability, which is expanded upon in Chapter 3.

Self-efficacy Bias and Calibration

SE research has widely acknowledged that SE is rarely an accurate reflection of an individual's ability (Dunning, 2011; Mabe & West, 1982), but the calibration between self-efficacy and actual ability has had more research prevalence in recent years. Research has shown that SE beliefs that most align with actual ability have the highest benefit to learners, as it allows them to implement effective learning strategies (Stankov & Lee, 2014).

Primarily, this has been interpreted as self-efficacy being a self-fulfilling prophecy (Pajares, 2002; Schunk & Pajares, 2004). However, as recognized by Bandura (1997), miscalibration between self-efficacy and actual ability happens, with potentially negative effects. Over-efficacious people may choose tasks that are beyond their abilities and fail, whereas under-efficacious people may choose tasks that are too easy and risk under developing their skills (Schunk & Pajares, 2004).

Over-efficaciousness results in failure, an absence of reality in their outcomes, with a lack of appropriate approach (Valentine et al., 2004). Over-efficacious learners can be overly ambitious without having the actual ability to perform to that level, which can result in failure (Schunk & Pajares, 2004) or, in the opposite direction, they can underestimate the level of effort needed to succeed (Boekaerts & Rozendaal, 2010; Hacker et al., 2000). Additionally, over-efficacious individuals may act carelessly regarding preparation (Vancouver et al., 2002; Vancouver et al., 2001). Over efficacious individuals' ability to improve is hampered by the misunderstanding of their actual ability, which decreases the chance that they will seek out opportunities to improve (Dunning, 2011; Jaeken et al., 2017).

While less researched, there are negative impacts for learners who are under-efficacious. They can become avoidant of trying perceived challenging tasks, which inhibits skill development, or they may also misallocate their time with a focus on over-studying (Boekaerts

& Rozendaal, 2010; Schunk & Pajares, 2004). Under-efficacious learners have been shown to apply peers' suggestions without critically thinking through the advice before implementing it, or self-doubt may influence their decision to engage with others (Usher & Schunk, 2017).

Researchers have found during literature reviews that the majority of SE literature primarily focuses on learners with high SE and low ability, which is representative of the majority of students being over-efficacious, with a minority of students being under-efficacious (Magnus and Peresetsky, 2018; Schlosser et al., 2013; Talsma et al., 2019). There is a gap in the literature on bridging the space between self-efficacy and actual ability. Bandura (1997) has stated that self-evaluations show inaccuracies if SE assumptions lack the sources of self-efficacy to inform them. To this researcher's knowledge, there have been no studies examining whether an individual's knowledge of self-efficacy influences their self-efficacy levels.

After reviewing the literature, several research questions arose.

Research Questions

Based on the review of the literature and identifying gaps, I have developed the following research questions to investigate a training intervention aimed at teaching self-efficacy to adult workers holding a sales position:

1. How is sales self-efficacy distributed among salespeople's age, gender, and experience level?
2. To what extent does a self-efficacy training intervention influence salespeople's self-efficacy?
3. To what extent does a self-efficacy training intervention influence the knowledge of self-efficacy?

4. To what extent does the knowledge of self-efficacy predict participants' self-efficacy levels?

Hypotheses

After reviewing previous literature on self-efficacy development interventions, several hypotheses were determined.

H1: Demographic factors (age, gender, sales experience) significantly differ self-efficacy among salespeople.

H1a: Self-efficacy differs significantly across different ages and H1b: self-efficacy differs significantly across experience levels.

The first part of hypothesis one is determined from previous literature, which states that mastery experiences are the most significant source of self-efficacy (e.g., Bandura, 1987; 1997; Sitzman & Yeo, 2013; Talsma et al., 2018), meaning that those with longer sales careers and higher ages would accrue mastery experiences. Hence, influencing self-efficacy at a more impactful rate than those with less experience and younger ages.

H1c: Self-efficacy does not differ significantly across gender.

Chew, Halim, and Matsui (2002) found that in enterprising and realistic domains, men reported higher SE levels than women, but in artistic, investigative, and social domains, that was reversed. In academic settings, boys have exhibited higher SE in mathematics, but the opposite was true for writing (Huang, 2013; Usher & Pajares, 2008). Some research has shown few differences between salespeople's gender in motivation (Dubinsky et al., 1993), performance (Frino & Desiderio, 2013), and self-efficacy levels (Peterson & Crittenden, 2020), but others found differences in motivation and sales performance (Ricks & Veneziano, 1998; Siguaw &

Honeycutt, 1995). With the lack of consistent evidence on the influence gender has on salespeople's self-efficacy, I have posited that there will not be a significant difference.

H2: A self-efficacy training intervention will influence participants' sales domain self-efficacy compared to the comparison group.

Hypothesis two is formed from the literature in education and healthcare that developed successful interventions that influenced self-efficacy. Research in PreK-12 that combined two sources saw an increase in self-efficacy (Al-Darmaki, 2004; Barbee et al., 2003; Dempsey et al., 2009; Papastergiou, 2010). Additional studies included a social persuasion component that enabled students to interact with adults and peers they identified with (Girolametto et al., 2004). Macaskill and Denovan (2013) found that by providing information via psychological indexes, students could use the physiological indexes to influence self-efficacy. These interventions indicate that targeted interventions focused on self-efficacy influence have been successfully implemented in multiple domains.

Several interventions utilized eLearning or computer-based training to guide learners through interventions that allowed for practice and reflection (Chen, 2011) and vicarious experiences through modeling (Kim et al., 2007; Shaw, 2010). These studies provide support for the modality of the intervention and subject matter. While the above interventions did not specifically teach SE, they utilized the four sources to prompt reflection, which resulted in increased SE.

This study's self-efficacy training intervention does not target specific sources of self-efficacy but instead trains on all facets of self-efficacy and self-efficacy knowledge. While different from the cited self-efficacy studies, by drawing from interventions completed in growth mindset intervention studies (Aronson et al., 2002; Burnette et al., 2018; Paunesku et al., 2015),

there is a plausible cause to state that an intervention teaching participants how to identify these four sources will influence self-efficacy.

H3: A self-efficacy training intervention will increase the participants' knowledge of self-efficacy compared to the comparison group.

I posited that the training intervention will increase participants' knowledge of self-efficacy based on the current evidence presented through the literature. Throughout education research, there has been an emphasis on increasing knowledge and/or academic performance. Several intervention research studies tailored to the goal of increasing self-efficacy have strove to increase knowledge through asynchronous e-learning as well. Shaw (2010) implemented knowledge maps into their e-learning and saw an increase in self-efficacy and subject knowledge, and while this study does not include concept maps, it is designed to break down self-efficacy into digestible components, much like a knowledge map does. Additional studies have found that using a positive and empathetic manner in an asynchronous e-learning environment increased not only self-efficacy but also learning (Kim et al, 2007). The current intervention is written in a casual and approachable manner, similar to that of Kim and colleagues' (2007) intervention. Additionally, the intervention was developed by following instructional design best practices, such as Gagne's (1965) Nine Events of Instruction and Bloom's Revised Taxonomy (Anderson & Krathwohl, 2001), in order to foster learning.

H4: Participants' knowledge of self-efficacy will predict changes in their self-efficacy levels.

Bandura (1997) states that SE self-evaluations trend towards being inaccurate, especially in novice participants, because the SE judgements are made without the influence of mastery experience, the most influential source of SE. Without that, participants use less reliable sources to judge their SE, including subjective sources such as familiarity or preconceived notions

(Dunning, 2011). When relying on unreliable sources, learners are faced with the inability to accurately perform as well as the inability to identify what is needed to do so (Kruger and Dunning, 1999).

Self-efficacy interventions have shown that there is success in increasing self-efficacy levels (Al-Darmaki, 2004; Barbee et al., 2003; Dempsey et al., 2009; Girolametto et al., 2004; Papastergiou, 2010) as well as improvement in knowledge levels (Kim et al, 2007; Shaw, 2010). Combined with the effectiveness of increasing knowledge of, as well as an individual's growth mindset (Aronson et al., 2002; Burnette et al., 2018; Paunesku et al., 2015), I predict that the level of knowledge of self-efficacy will predict changes in their self-efficacy levels.

Chapter Three
Methods

Design

In order to investigate the research questions, an experimental training intervention study was developed. The experimental condition received a training intervention on the topic of self-efficacy, whereas the comparison condition received training on artificial intelligence. After a non-probability sampling, random assignment was implemented to equally assign participants into the experimental or comparison conditions by level of experience. For research questions one and two, the independent variable was the training intervention, and the dependent variables were SE and SE knowledge. When evaluating research question three, the independent variable became SE knowledge, with the dependent variable being SE levels. The following research questions guided the design of this investigation.

Research Questions:

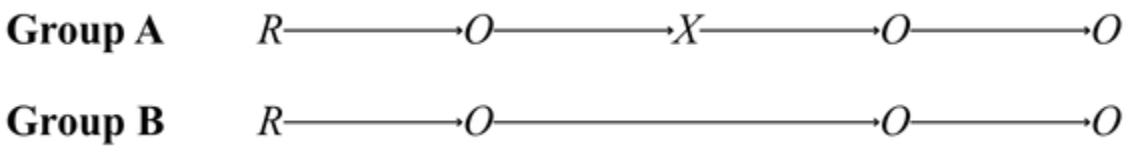
1. How is sales self-efficacy distributed among salespeople's age, gender, and experience level?
2. To what extent does a self-efficacy training intervention influence salespeople's self-efficacy?
3. To what extent does a self-efficacy training intervention influence the knowledge of self-efficacy?
4. To what extent does knowledge of self-efficacy predict self-efficacy levels?

A pretest-posttest experimental training intervention study design was established in order for the study to have a true experiment with random assignment of participants. This approach reduces the possibility of systematic differences among characteristics of the

participants, which, in turn, could impact the outcomes (Creswell & Creswell, 2022). Thus, differences between groups and outcomes can be attributed to the intervention (Keppel & Wickens, 2003). Following Campbell and Stanley's (1963, p. 6) notation system, Figure 1 illustrates the study design.

Figure 1

Study design



Participants and Context

The population of this study was adults currently holding a sales position as their full-time or part-time occupation at a business-to-business (B2B) and/or a business-to-customer (B2C) company in the United States. Due to the availability and access to the study sample, a nonprobability sampling was used (Creswell & Creswell, 2022). Recruiting of participants occurred on two websites, Prolific and CloudConnect, where researchers are able to have access to a pool of participants who are presented with studies for which they fit the criteria, and are able to partake in the study. The criteria set for this study consisted of individuals who resided in the United States, had full-time or part-time employment in a sales position, at a for-profit business-to-business (B2B) and/or a for-profit business-to-customer (B2C) organization.

Prolific and CloudConnect are frequently used participant pools for researchers. Both sites required me to set up the study, which included a title, description, time estimation, instructions, participant criteria, and all links. After the site confirmed these elements were included, the study was published, and all participants who fit the criteria were able to

participate. The study was divided into Part 1 and Part 2. Participants who completed part 1 were invited manually to participate in part 2. Prolific and CloudConnect provided participant IDs that were then used as identification for participants throughout the study. After participants completed each part, I manually checked their completion and then approved their payment. Participants were able to message me, as I was them; however, their anonymity was maintained as the sites used their IDs.

Of the 57 participants who completed the full study, 49.1% identified as female, 49.1% as male, and 1.8% as non-binary or other. Years of experience were grouped into three levels: 0-5 years (N=28), 6-10 years (N=14), and 11+ years (N=15). Participants' ages were also grouped with 25-34 (N= 22) and 35-44 (N=22) being the majority, with 44-54 (N= 7), 18-24 (N=4), 55-64 (N=2), and 65+ (N=0) following after. The greater part of participants (77.2%) reported that they maintained full-time employment, while 21.1% stated they were part-time, and 1.8% were not listed. Participants were asked to report their race as Caucasian (68.4%), Black (17.5%), Chinese (3.5%), mixed race (3.5%), other (5.3%), and 1.8% preferring not to say.

Random assignment was used to designate participants' study conditions. After completing the first three surveys– demographic, SE level, and SE knowledge– the participants were immediately randomly directed to either the comparison or experimental condition. The survey tool was established to randomly assign participants to each condition. For example, if two participants selected their experience level as "0-5 years," one would be randomly assigned to the comparison group and the other to the experimental group. The online tool randomly assigns participants and provides them with access to the conditions appropriate training automatically, without my involvement, to ensure the integrity of a true experimental study.

Participants were compensated for their time through the recruitment platform. Each participant had to submit proof of completion, which I verified through a participant's uploaded screenshot, survey completion, and course completion, before receiving payment. All participants agreed to the terms of the study, which was approved through The University of Oklahoma's Institutional Review Board, before beginning their first survey.

Instrumentation and Materials

Instruments

Research shows that domain-specific SE measures are more accurate predictors of academic performance and motivation (Klassen & Usher, 2010). Thus, the self-efficacy level instrument will be adapted from other studies' instruments, but it will be domain-specific. Two quantitative survey instruments will be used to assess self-efficacy levels and self-efficacy knowledge scores; the same instruments will be used for the pre- and post-questionnaires, excluding the demographic questions implemented in the pre-questionnaire. the

SE Level. While Bandura (1977) stated that SE instruments should measure the magnitude and the strength of SE through a unipolar scale, Mauer and Andrews (2000) found that self-efficacy Likert-type scales require 50-70% fewer participant responses. With this study having a small sample size, the decision was made to use a Likert-type scale.

With the SE level assessment focused on domain SE specific to salespeople, an SE scale on personal selling with sales-related tasks will be used. According to Peterson (2020), personal selling SE scales generally fall into three categories of scales being adapted from Jones' (1986) SE scale, Chowdhury's (1993) adaptations, or scales used once with no repeated instances. Over half of the developed scales were derived from Chowdhury's (1993) scale, which was designed

to measure overarching SE in negotiations but has an estimated reliability of .92 (Peterson, 2020).

The most widely adopted adaptation of the Chowdhury (1993) scale of personal selling adaptation is the Sujan et al. (1994) scale. This scale consists of seven items with three reversed-worded questions. Due to its reliability coefficient of .77 based on 190 sales representatives, the Sujan et al. (1994) scale will be used as the SE measure instrument in this study. The scale used statements such as "I am good at selling." and a reverse-coded "It is difficult for me to put pressure on a customer." Additional items included "I know the right thing to do in selling situations.", "I am good at finding out what customers want.", and a reverse-coded "I find it difficult to convince a customer that has a different viewpoint than mine." The full instrument is provided in Appendix A.

SE Knowledge Scores. The SE knowledge survey will serve as a measure to establish that the independent variable was successfully manipulated as intended (Creswell & Creswell, 2023). In order to do this, survey questions will be developed from the intervention's content.

The knowledge survey consists of 10 multiple-choice questions developed from the intervention's learning objectives and outcomes. The intervention's objectives were designed using Bloom's Revised Taxonomy, which is one of the most widely used frameworks for designing instructional objectives (Anderson & Krathwohl, 2001). The intervention was built on four primary objectives: define self-efficacy, explain the three ways self-efficacy influences behavior, explain the different factors that influence self-efficacy, and, lastly, determine ways to utilize self-efficacy. The knowledge survey was developed from these objectives and used the supporting course content to build the assessment. For example, the first objective is "define self-efficacy," which is assessed through the first question, which asks "What is the definition of self-

efficacy?", with four options. Multiple-choice questions are a frequently used assessment tool due to consistency and ease of data collection, and if written well, they have high reliability (Harris & Jones, 2021). Therefore, the knowledge survey was developed using instructional design guidelines for assessment alignment and construction.

Based on Harris and Jones' (2021) recommendations, the questions had distractors of similar length and followed the grammar used in the stem. Distractors did not use options that included "all of the above" and "none of the above" or options that used a combination of answers like "Answers A and B". The question stems were written clearly and without unnecessary information while avoiding potential hints. All questions consisted of four answer options, three being distractors, and one being the correct answer. The correct answers were written plainly and without loose interpretation, to ensure it was the best answer. Last, the correct answers were randomized to avoid any possible patterns in choice selection.

As an additional step, the knowledge survey was reviewed by two professional instructional designers based on the intervention's content and objectives for internal consistency. The survey consisted of items such as "What is the definition of self-efficacy?" with four options to select: one correct answer, "Belief in your ability to perform a specific task", and three distractors: "Confidence in your general intelligence", "Motivation to complete a goal", and "Persistence in the face of failure". Another question, "Observing a peer successfully completing a task most directly relates to which influence on self-efficacy?", had the correct answer of "vicarious experience." To keep the distractors within a similar length as Harris and Jones' (2021) recommendations, the other options were "Post mastery experience", "Social persuasion", and "Physiological state". The self-efficacy knowledge survey is presented in Appendix B.

Materials

In addition to the instruments, this dissertation required two e-learning trainings to be developed in order to test my hypotheses. Using the same structure and design, the e-learning courses were both developed in a popular authoring platform, Articulate Rise. In this section, I detail the intervention and comparison trainings' design, structure, and content.

Intervention. The training intervention was guided by the four sources of self-efficacy (Bandura, 1997) and experimental studies in education (Chen, 2011; Cheung et al., 2003; Kim et al., 2007; Shaw, 2010) and healthcare (Ashford et al., 2010; Myers et al., 2020; Prestwich et al., 2014) to inform the design. The goal of the intervention was to teach learners about self-efficacy as a subject area within a workplace training session. Based on the research questions, I determined that the training intervention needed to cover four specific objectives in order to increase knowledge on self-efficacy. The objectives were written using the revised version of Bloom's Taxonomy (Anderson & Krathwohl, 2001) to ensure that they aligned with the desired results and matched the content. The first course objective, "define self-efficacy", establishes a requisite for participants to define what, and what does not, constitute self-efficacy. Objective one then enables participants to learn how to "explain the three ways self-efficacy influences behavior". From there, the training aims to enable participants to "explain the different factors that influence self-efficacy," which sets the foundation for the last objective, "determine ways to utilize self-efficacy."

After determining these training objectives based on the research questions, I established the training modality and delivery. Salespeople are fast-moving with varying schedules based on their organization's needs; hence, they will prefer the flexibility to take the training intervention

at a time that is doable within their schedules. Based on the participants' roles, I determined that a virtual asynchronous training modality through an internet-based LMS would be the best fit.

Having first identified the objectives and then the modality and delivery, the detailed training development began. An initial content outline was developed and reviewed by an expert in self-efficacy within the field of educational psychology. Based on the outline's approval, I utilized instructional design strategies to develop the intervention. First, I made the decision to break the full training into five modules to chunk the content to reduce cognitive load– known as the amount of information that can be stored cognitively– on participants (Sweller, 1994). Second, the modules all end with a reflection prompt that encourages participants to detail their thoughts in a journal. While this is an ungraded and unshared aspect of the training, the reflection enables deeper retention and applicability (Knowles, 1984). The self-efficacy training was written in a relatable manner that is tailored to the sales domain. While the content is general SE, examples and actions are written from salespeople's perspectives to situate the training in their daily work. This was established from adult learners' need to know the "why" of the training (Knowles, 1984).

The training intervention has five modules consisting of a course introduction, an introduction to SE, the importance of SE, how to utilize SE tools, and a conclusion. Module 1: Course Introduction details the five modules, course outline, and course objectives such as "define self-efficacy", "explain the three ways self-efficacy influences behavior", "explain the different factors that influence self-efficacy", and "determine ways to utilize self-efficacy". Module 1 ends with a prompt to journal throughout the course before allowing the participant to move forward to Module 2.

Module 2: Introduction to SE focuses on defining self-efficacy in a practical and usable way. This module situates SE in day-to-day examples as well as sales contexts. The module defines SE and then prompts the participant to ponder, “Let’s pause for a moment and reflect. What was the last time you were presented with a task? This could have been a sale. A test. A DIY project, anything. How did you feel you were going to do on it? Good? Bad?” Then the module concludes by guiding the participant to mentally connect their answer to SE with a conclusion on what SE impacts (i.e., motivation, engagement, and emotion). This was in the form of a journal prompt that read, “When was a time that you could identify self-efficacy occurring in your life? It does not have to be sales specific”. Afterward, the prompt, participants selected “continue” to move on to the next module.

The next module, Influences of SE, is the largest and consists of two primary items. To begin, the module sets the context by reading “Your hands are sweaty. You are facing negative self-talk, and you’re thinking about the past times you haven’t performed well. Sound familiar? These are all items that influence your self-efficacy. And understanding how they influence your self-efficacy can help you improve it and ultimately help you perform higher.” Afterward, the module covers the first item on the three ways that SE influences individuals through task choice and willingness to try, effort and engagement, and persistence in the face of adversity. This information is presented in an accordion drop-down that allows the participants to consume the information at their own pace before reading the next component. The second is to explain the four factors that influence SE: post-mastery experience, vicarious experience, social persuasion, and physiological and emotional states. The intervention prompts this by stating, “A positive sense of self-efficacy is a foundation for experiencing intrinsic motivation (internal drive) and internalizing others’ extrinsic (external influences on motivation) goals and values.

Now, we have discussed several ways that self-efficacy influences US but what influences self-efficacy? There are several items. Turn the cards over below to learn about the 4 items influencing self-efficacy" and then allows the learner to interact with the course my clicking to flip over an on-screen card, similarly to flipping a notecard.

Module 4 consists of ways individuals can utilize SE with examples. Items such as documenting wins and seeking feedback are listed, among others. There is a journal prompt at the end of Module 4 reading, "Where do you see areas in your life that you can use self-efficacy?" Module 4 then transitions to Module 5, which consists of a summarization and a call to action of "Remember, self-efficacy is an individual's belief in their ability to perform well at a specific task. So really, how well do you think you are going to do at something? We covered the ways that self-efficacy can influence behavior, what influences self-efficacy, and the ways that you can utilize self-efficacy to be a stronger salesperson." The training intervention content document is attached as Appendix C.

Comparison. The comparison group was assigned a comparison training on generative artificial intelligence (Gen AI). The comparison training replicated the training structure, visual design, and interactions, with the only difference being the content presented. As with the intervention, I followed Bloom's Revised Taxonomy (Anderson & Krathwohl, 2001) when developing the course objectives. The first was "define generative artificial intelligence", the second was "explain the different factors that inform GenAI", and lastly, "determine ways to use GenAI in sales". These three objectives maintained the same Bloom's Revised Taxonomy level classification (Anderson & Krathwohl, 2001) as the intervention (remember, understand, and evaluate) in order for the comparison training to maintain the structure and purpose of the intervention. Learners in the comparison training were prompted with the same instructions,

iconography, and visuals as the intervention group. For example, both trainings prompted the learner to utilize a journal throughout the course. The instructional text for both reads, "Throughout this course, you will be provided with prompts to journal. This is free form! Journal in any style that fits best for you, but make sure to do it. This will not be shown to anyone else unless you want it to. Grab a pad of paper, open a doc, open a text file, however you like best, document your thoughts."

The comparison group moved through the same training structure consisting of five modules. The five modules were: Introduction, What is Gen AI?, How Can You Use Gen AI?, and Conclusion. Module one, "Introduction", covered the course objectives and journal prompt instructions. Module two, "What is Gen AI?", provided a general overview of generative artificial intelligence, concluding with a journal prompt. Module three, "How Can You Use Gen AI?", informed learners on the common uses of Gen AI, how Gen AI is trained, and a prompt to reflect on when Gen AI could have been utilized in the learner's past. Module four, shared ways for the learner to use GenAI. As a conclusion, Module five ended with a prompt encouraging learners to posit if GenAI is a useful tool for them to utilize.

The experimental and comparison trainings were built with the e-learning development platform, Articulate Rise. The intervention used a clean, uncluttered graphic user design and utilized Articulate Rise's tools and templates to enhance the user experience. Once the intervention and comparison trainings were built, they were published to the learning management system (LMS), Articulate Reach. Both the intervention and comparison training took 10-15 minutes to complete, depending on the participant's pace. In the next section, I review the study's procedures.

Procedures

As a pretest-posttest experimental training intervention study, there were several elements of the study procedure. The study consisted of a between-subjects design with each participant being randomly assigned either the experimental or comparison group, which allows for the manipulation of an independent variable (Creswell & Creswell, 2022; Wickens & Keppel, 2004).

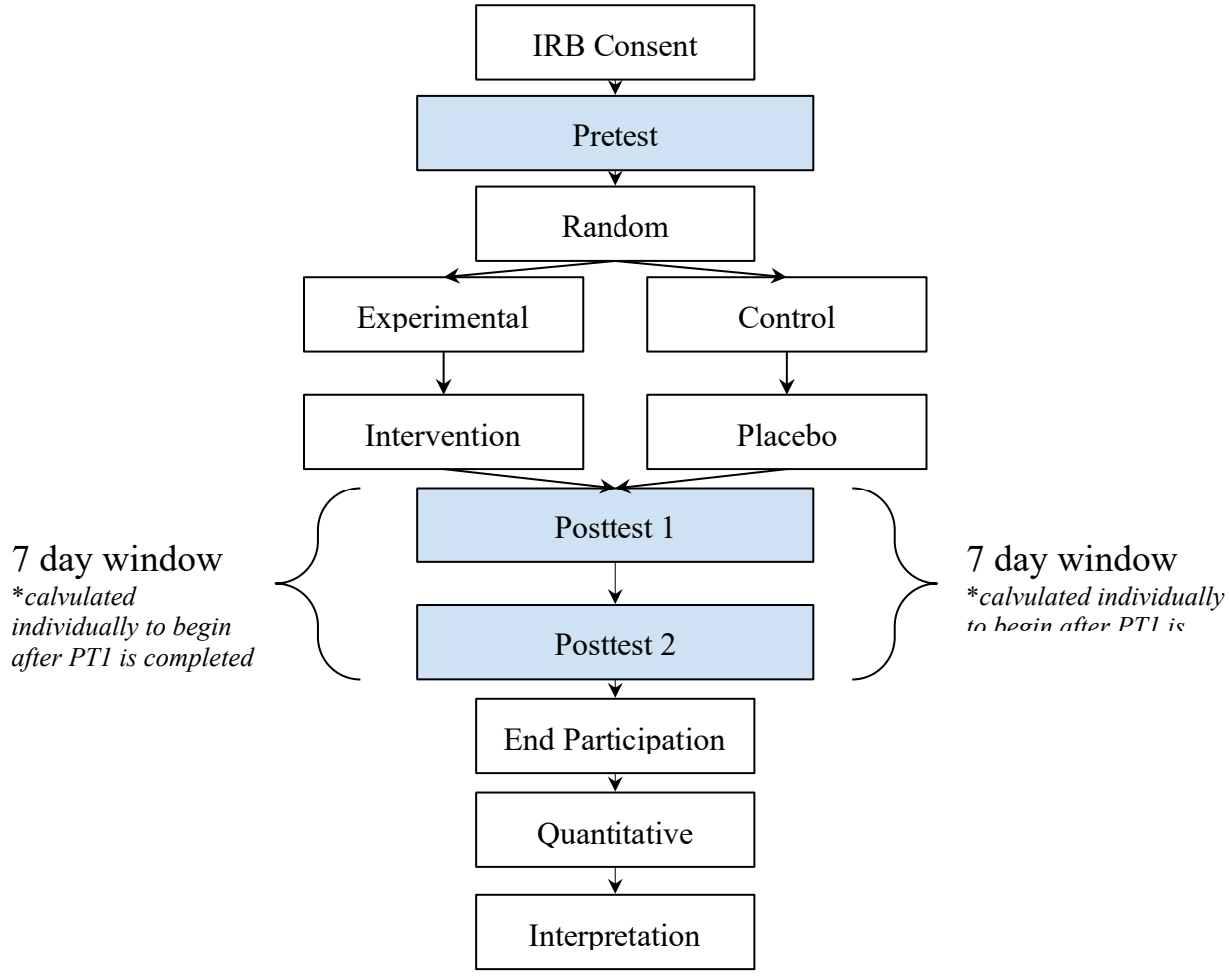
Dictated by the sites used for participant recruitment, participants were screened by the site (Prolific or CloudConnect) based on the set demographics and then offered the opportunity to participate in the study. If they accepted from the site, they were provided with a Qualtrics link. On the first page of the Qualtrics link, all participants reviewed the study consent form, which was approved by the University of Oklahoma's Institutional Review Board, and either accepted or declined to participate. If they declined, they were taken out of the survey, and their participation ended. If accepted, they were asked to confirm they were over 18 years of age. If they selected no, their participation ended. If they selected yes, they then completed the pre-tests consisting of the SE measure, the SE knowledge measure, and a demographic questionnaire. Based on the answers provided in the demographic questionnaire, participants were randomly assigned to either the experimental or comparison groups by their stated experience level without my involvement. Each group received a separate link that enabled them to access the online training. Participants were asked to keep the Qualtrics survey open in order to upload a proof of completion and take posttest one. After completing the training, participants downloaded the certificate of completion and/or uploaded a screenshot of the last frame from the training. Then, they were automatically provided with Posttest 1 and were required to complete the posttest in order to submit their completion code in Prolific or CloudConnect to receive their payment for Part One.

All participants received an invitation to join the Part Two study seven days after they completed posttest one. Part Two was a rolling invitation with different individuals being added to the study each day in order to maintain the 7-day window per participant. If they accepted, they were provided with a link to Qualtrics to answer posttest two. Afterward, they were able to select their completion for me to verify and send payment for Part Two. This then concluded the participant's engagement with the study. I then progressed into data analysis.

Figure 3 details the study procedures from beginning to end.

Figure 2

Complete Study Procedures



Treatment Fidelity

Treatment fidelity is a multidimensional, but essential, construct to ensure that the intervention results can be interpreted as effective regardless of results (Sanetti & Fallon, 2011; Sanetti et al., 2021). In studies designed to influence learning outcomes that do not have high treatment fidelity, there can be less improvement in the outcomes (Scott et al., 2019). Hence, the intervention and procedures were designed with the four dimensions of treatment fidelity as a focus. For adherence and dosage, the intervention was delivered asynchronously in a specific and unchanging process order to ensure that the intervention was implemented in a consistent manner between participants. In both the experimental and comparison groups, each participant received access to the training immediately after completing their demographic survey and pre-test one. They were required to complete the training and posttest 2 in one session to ensure equal dosages for participants and groups. Participants were then sent posttest two, exactly seven days after completing posttest one. These consistent steps allowed the participants to have the exact implementation adherence and dosage.

Exposure was limited, if any, as participants were anonymous across the United States. Quality will be addressed by treatment receipt, which will consist of reviewing the self-efficacy knowledge level scores and determining the effectiveness of treatment receipt by knowledge level increases. Additionally, the intervention includes reflective components that prompt deeper comprehension (Knowles, 1984) to enhance the knowledge retention and the learner's engagement with the materials.

Data Analysis

To investigate the four research questions, several analyses were run. First, I ran descriptive statistics, consisting of the mean, standard deviations, skewness, and kurtosis on the comparison and experimental groups at each time point for the SE and SE knowledge scales. In

order to examine the intervention's impact on self-efficacy levels and self-efficacy knowledge levels between the comparison and experimental groups, a mixed repeated measures analysis of variance (ANOVA) was used. Running a mixed ANOVA allowed me to control for pretest differences and assess posttest differences while accounting for the pretest scores (Lomax & Hahs-Vaughn, 2012). I then ran a partial eta squared to determine the effect size (Lomax & Hahs-Vaughn, 2012). To address research question three, *"To what extent does the knowledge of self-efficacy predict participants' self-efficacy levels?"* I ran a simple linear regression with the independent variable being SE knowledge and the dependent variable being SE.

Chapter Four
Results

Data Screening

As the study occurred over a two-week span, attrition occurred. Seventy participants completed part 1 (pretest, training, posttest 1), while 57 participants completed part 1 and part 2 (posttest 2). The overall attrition rate was 18.6%, with the comparison group having 17.6% and the experimental group concluding with a 19.4% attrition rate. To determine if there was a significant dropout rate between the two conditions, I ran a Pearson Chi-square test (Turhan, 2020), which resulted in a p-value of .847, indicating that there was no significant difference. Unless otherwise stated, the results in this study are determined using the data from participants who completed the entire study. All analyses were conducted in IBM's SPSS version 31 software.

Descriptive Statistics

In Table 1, I provide the means, standard deviations, skewness, and kurtosis for the comparison and experimental conditions for the self-efficacy scale and self-efficacy knowledge test at the three separate time points (pre-test, post-test 1, post-test 2).

Table 1

Descriptive Statistics

	Experimental				Comparison			
Test	**Mean**	**SD**	**Skewness**	**Kurtosis**	**Mean**	**SD**	**Skewness**	**Kurtosis**
SES T1	3.83	.85	-.63	-.15	3.93	.78	-.81	.18
SES T2	3.93	.80	-.65	-.19	4.00	.76	-.79	-.04
SES T3	3.97	.97	-.98	.35	3.99	.82	-.65	-.81

SEK T1	.70	.12	-.19	-.04	.68	.14	-.57	-.33
SEK T2	.81	.11	-1.56	3.84	.66	.16	-.61	-.14
SEK T3	.81	.08	-.27	-1.51	.69	.16	-.63	.095

Research Question 1: Self-efficacy Level Findings

To address research question 1, *How is sales self-efficacy distributed among salespeople's age, gender, and experience level?*, I ran a mixed ANOVA to test the pretest and posttest 1 data from all participants, including the 13 who did not complete Part 2 (N = 70). The interaction between time and group was non-significant, $F(1, 68) = .056$, $p = .814$, $\eta 2 = .001$ (Greenhouse-Geiser corrected), suggesting the change in self-efficacy between rests were similar. However, when investigating the pretest and posttest 1 data for the 70 participants, the participants' experience level, gender identity, and age group showed relationships that required examination.

Participants who had 6-10 years of experience reported the highest starting SE level mean at 4.11, with the 11+ years following closely at 4.9. The lowest starting SE levels were with those who had 0-5 years of experience, with a mean of 3.71. Regarding age, those who reported they were 18-24 (N= 5) had a mean SE starting level of 3.54. The next group, 25-34 (N= 28), had a mean of 3.95, with 35-44 (N= 26) following closely at 3.81, and 45-54 (N= 7) 3.85. The oldest groups reported the highest levels, with 55-64 (N= 3) being 4.66 and 65+ (N= 1) having 4.42; however, these age groups had the lowest number of participants. In addition, I ran a Spearman's rank-order correlation to assess the relationships between participants' age and experience, and their SE test scores. The findings show a statistically significant, strong relationship between age and experience, as well as between the pretest and posttest.

Table 2

Correlation matrix

Variable	n	M	SD	1	2	3	4
Age	70	2.69	1.0	-			
Experience	70	1.73	.83	.586**	-		
SE Pretest	70	3.90	.78	.093	.220		
SE Posttest 1	70	3.98	.76	.138	.155	.913**	-

Note. Correlations are Spearman's rho coefficients. ** p < .01, * p <.05. Age is coded at 1= 18-24, 2= 25-34, 3= 35-44, 4= 45-54, 5= 55-64, 6= 65+. Experience is coded at 1= 0-5, 2= 6-10, 3= 11+.

With an almost even number of participants who identified as male (N= 35) and female (N= 34), males had a higher mean than females. Males were reported at 4.16, whereas females were 3.68, revealing that males were 13.04% higher than females in their starting SE level. I ran an independent t-test to examine if the variability between male and female respondents was statistically significant, 2.71(70)= 55.96, p = .013. The calculated effect size (d= .65) indicated a medium to large effect. These findings indicate that gender was a significant factor in participants' initial SE levels.

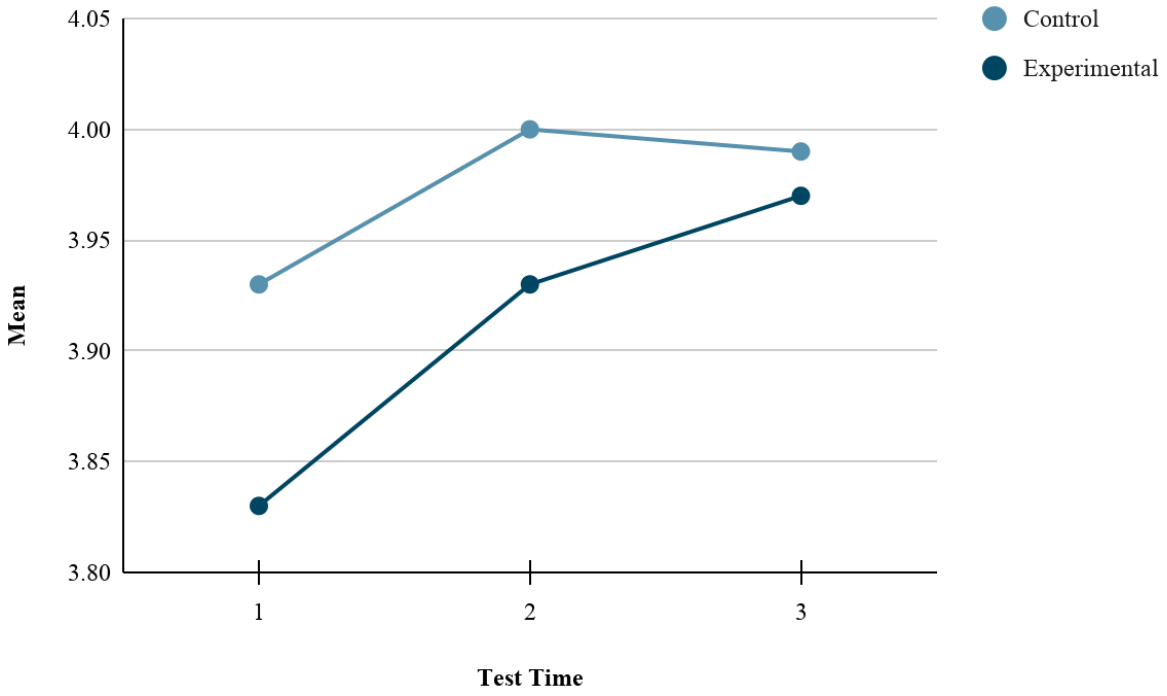
Research Question 2: Intervention's Influence on Self-efficacy Level Findings

In order to test my second research question, *To what extent does a self-efficacy training intervention influence salespeople's self-efficacy?,* I performed a mixed repeated measures analysis of variance (ANOVA). The participants' condition (experimental or comparison) was used as the between-subjects factor, whereas the time points (pre-test, post-test 1, post-test 2) served as the within-subjects factor. Through running a Box's M test of equality, I was able to determine that the assumption of homogeneity of covariance matrices was met (M = 1.97, p =

.933). Additionally, Levene's Test of Equality of Error Variances indicated that the assumption of homogeneity was also met at the three individual time points: pre-test (p= .49), post-test 1 (p= .55), and post-test 2 (p= .46). Sphericity was assumed at a p-value of .802, however, for conservative estimation the Greenhouse-Geisser correction (1959) was applied. The results of the mixed ANOVA revealed that the interaction between the two conditions and three time-points was not statistically significant with $F(1.45, 79.5) = 0.22$, p = .728, η2= .004 (Greenhouse-Geiser corrected), which failed to reject the null hypothesis. Further indication that the Condition x Time did not follow a significant linear trend, $F(1, 55) = 0.285$, p = .595, η2= .005, nor did it show a significant quadratic trend, $F(1, 55) = 0.047$, p= .830, η2= .001. However, after examining the means and profile plots, the experimental group did show continued growth in their SE levels, whereas the comparison group spiked and dropped, both of which are shown in Figure 3. Indicating that, while statistically negligible, there is a linear upward progression in the experimental group. However, there was a significant effect of time on SE $F(1, 68) = 5.58$, p = .02, η2= .07 regardless of the condition.

Figure 3

Means and Profile Plot



Research Question 3: Intervention's Influence on Self-efficacy Knowledge Findings

To address my third research question, *To what extent does a self-efficacy training intervention influence the knowledge of self-efficacy?,* I ran a mixed repeated-measure ANOVA with the between-subjects factor being condition and the within-subjects factor consisting of the test time points. Before running the mixed ANOVA, I was able to determine that the homogeneity of covariance matrices was met through running a Box's M test of equality. Although Box's M test was significant (M= 14.28, p= .037), the assumption of homogeneity covariance matrices was considered satisfied given that the p-value remained about the conservative .001 threshold traditionally required for sensitive measure (Tabachnick & Fidell, 2019). I then ran a Levene's Test of Equality of Error Variances for each time point (pre-test, posttest 1, posttest 2) of the self-efficacy knowledge tests. The pre-test (p= .458) and post-test 1 (p= .076) met the assumptions; however, post-test 2 was violated (p= .02). The ratio variances were below the 4:1 threshold (Tomarken & Serlin, 1986) with a 3.3:1 ratio implying that the data

is not different enough to increase the Type I error rate. This, and the group sizes being nearly equal (Comparison N= 28; Experimental N=29), led me to deem the mixed ANOVA robust enough to continue without data transformation.

The results of the mixed ANOVA revealed the time versus condition interaction was statistically significant, $F(2, 110) = 7.89$, p=.001, $\eta 2$= .126. Additionally, the data resulted in a large effect size with partial eta square being .126 (Cohen, 1988), which suggests that the intervention had a large impact on the self-efficacy knowledge scores of participants, compared to those in the comparison group. The comparison group generally maintained their self-efficacy knowledge levels (pretest M = .68, SD= .026; posttest 1 M= .66, SD= .027, posttest 2 M= .69, SD= .023) throughout the time points whereas, the experimental group saw an increase at posttest 1 which maintained at posttest 2 (pretest M= .70, SD= .025; posttest 1 M= .81, SD= .027; posttest 2 M= .81, SD= .023). When examining the time interaction, $F(2, 110) = 6.42$, p = .002, $\eta 2$= .105, indicating that the intervention was successful in increasing SE knowledge. As shown in the descriptive means, the experimental group demonstrated gains in SE knowledge after taking the intervention, whereas the comparison groups remained the same.

Research Question 4: Self-efficacy Knowledge Predictions of Self-efficacy Level Findings

To test research question four, *To what extent does the knowledge of self-efficacy predict participants' self-efficacy levels?,* I ran a linear regression analysis. For this test, the independent variable was self-efficacy knowledge, and the dependent variable was self-efficacy levels. The results were not statistically significant (p= .076), but are in a range that shows a potential marginal significance. Based on this level of significance, it cannot confidently be stated that there is a relationship that will exist in the broader population since there is a 7.6% chance that the relationship is random noise. At a 1.570, the unstandardized B indicates that for every

increase in the self-efficacy knowledge, there would be a 1.57 increase in self-efficacy levels. The regression model explains only 5.6% (R^2 = .056) of the variance in the self-efficacy level.

After analyzing these results, I was able to interpret and discuss the findings. I discuss the findings of the research questions individually and then proceed to state the theoretical and practical implications. I conclude Chapter 5 with the study limitations and future directions.

Chapter 5
Discussion

This study sought to determine the influence of a self-efficacy intervention on the knowledge of self-efficacy and self-efficacy levels, as well as examine whether SE knowledge is predictive of SE. While the intervention did not influence self-efficacy, it did significantly increase knowledge of self-efficacy. Additionally, the results of the linear regression depicted marginal significance of self-efficacy knowledge as a predictor for self-efficacy levels. These findings indicate that self-efficacy knowledge does not influence self-efficacy levels in adults holding sales roles as their occupation.

Question 1: Salespeople's Self-efficacy

As hypothesized in H1a, participants with more years of experience and higher age had a higher starting SE level. Those with 6-10 and 11+ years of experience reported the highest levels, while those with 0-5 years reported the lowest. Individuals who were over 55 reported the highest level of starting SE, with those who were 18-24 reported the lowest. This aligns with previous self-efficacy literature: those with more successful mastery experiences, gained over longer careers, have higher self-efficacy (Bandura, 1986; 1997; Sitzman & Yeo, 2013; Talsma et al., 2018).

However, the data failed to reject the null hypothesis for H1b as male salespeople had significantly higher SE than females. This stands in opposition to Peterson & Crittenden (2020), who did not find a gender difference in self-efficacy levels; however, they did find that female salespeople reported themselves as more successful. This is expanded upon by the correlation between self-efficacy and sales performance being .43 for males, whereas it was .60 for females. This indicates that sales performance is an important variable to measure when examining the

differences between genders. This study did not control for performance levels, but it is recommended in future research. This would contribute to previous research on differences between self-efficacy in salespeople's gender (Dubinsky et al., 1993; Frino & Desiderio, 2013; Peterson & Crittenden, 2020; Ricks & Veneziano, 1998; Siguaw & Honeycutt, 1995).

Question 2: Intervention's Influence on Self-efficacy Levels

The results of the mixed ANOVA did not show a significant difference between the comparison and experimental groups' self-efficacy levels. However, while negligible, the experimental group showed steady growth in their self-efficacy levels, whereas the comparison group spiked immediately after posttest 1, then dropped.

Based on the literature, there are a few potential explanations for why participants did not significantly increase their self-efficacy levels after taking the intervention. First, there may not have been enough time between Posttest 1 and Posttest 2 for participants to have reported self-efficacy differences. Since the intervention was knowledge-based, it may have influenced the selection processes without directly impacting the sales self-efficacy. Selection processes are the psychological processes that people engage in to assess environments and decide their level of effort within them (Bandura, 1996; Betz & Hackett, 1986; Kent, 1987; Snyder, 1980). These environments are where individuals gain mastery experiences, which have been shown to have a large influence on SE (Bandura, 1996). With the intervention teaching about mastery experiences and how they influence a person's self-efficacy, this could potentially influence the individuals' future selection process. However, this would need to be explored further in future studies.

Second, the intervention was a lower level of learning as defined in Bloom's Revised Taxonomy (Anderson & Krathwohl, 2001) that successfully informed participants, but did not require immediate application. Previous studies have used authentic experiences (Gurvitch and

Metzler, 2009) and instructor feedback (Al-Darmaki, 2004; Barbee et al., 2003; Dempsey et al., 2009; Papastergiou, 2010) to increase SE. Additionally, the intervention prompted reflection, but did not incorporate social persuasion, whereas previous online learning interventions were conducted in homogeneous groups that took the intervention together, which could allow for social persuasion (Dempsey et al., 2009; Govaere et al., 2012; Kim et al., 2007; Shaw, 2010; Zimmerman & Kitsantas, 2002). In addition, one total intervention may not be enough. With mastery experiences being the most potent form of SE influence, along with vicarious experience and social persuasion being key informants, the knowledge of SE alone may not have been enough to change SE without additional influences.

Question 3: Intervention's Influence on Self-efficacy Knowledge

As hypothesized, the intervention significantly increased participants' knowledge of self-efficacy compared to the comparison group. This result supports previous research on self-efficacy interventions increasing knowledge levels through e-learning (Kim et al, 2007; Shaw, 2010). The intervention was designed using instructional design (Anderson & Krathwohl, 2001; Gagne, 1965; Sweller, 1994) and adult learning (Knowles, 1984) best practices to best facilitate learning. However, the results show that knowing about SE, in and of itself, does not influence SE, which indicates that awareness of the concept is not enough to calibrate it.

Although growth mindset interventions, which taught growth mindset as a concept, were shown to be effective in increasing growth mindsets (Aronson et al., 2002; Burnette et al., 2018; Paunesku et al., 2015; Yeager et al., 2019), this study did not increase SE alongside the SE knowledge. Those with growth mindsets have shown to have higher self-efficacy levels (Dweck & Master, 2008), higher academic achievement (Dweck, 2009), and higher perseverance in adversity (Dweck, 2009). While self-efficacy and growth mindsets are similar in their

characteristics of being malleable, utilizing feedback to make future actions, and determining how individuals approach difficult situations (Bandura, 1997; Dweck, 2009), they also differ in a keyway that could have impacted the transferability of growth mindset interventions to this study. Self-efficacy primarily uses situations from the past or current states (mastery experience, vicarious experience, social persuasion, and physiological and affective states) to inform SE (Bandura, 1997), whereas growth mindset emphasizes the possibility of future change (Dweck, 2009). So, although the SE knowledge increased, the participant's previous SE sources remained the same. These results signify a need for the intervention to go beyond knowledge and include other sources of self-efficacy.

Question 4: Self-efficacy Knowledge's Prediction of Self-efficacy Levels

The results did not show that SE knowledge was a predictor of SE, but indicated a marginal significance with a weak positive trend. However, with the p-value being high and the b-coefficient substantively large, a larger sample size is needed to determine if the p-value is random or a true trend, as well as to examine the effect size (Lomax & Hahs-Vaughn, 2012). Similarly, to the items discussed in question 3, the knowledge of self-efficacy may not be enough to influence an individual's self-efficacy levels.

In addition, contextual influences can influence people's interpretation of self-efficacy sources (Usher & Pajares, 2008; Usher & Schunk, 2018). The intervention presented self-efficacy from a sales context, and with the self-efficacy context influencing a person's perception of the sources of SE (Usher & Pajares, 2008; Usher & Schunk, 2018), this may have impacted the effectiveness. Additionally, the intervention brought awareness to the four sources of SE, which could have allowed participants to identify previous events that could inform a source.

However, when multiple sources are influencing SE, they can negatively impact a person's ability to weigh and utilize the information (Usher & Pajares, 2008).

Theoretical Implications

The findings of this study have theoretical implications for self-efficacy calibration, interventions, and self-efficacy in salespeople. To start, the study found that knowing about self-efficacy is not enough to influence self-efficacy. Self-efficacy is rarely an accurate representation of actual ability (Dunning, 2011; Mabe & West, 1982), but the calibration between the two has the most benefits (Stankov & Lee, 2014). The majority of self-efficacy interventions focus on increasing SE versus calibrating it, though the need for calibration has been highlighted in recent years. This study contributes to calibration literature by determining that knowledge is not enough to influence self-efficacy, nor calibrate it, with future interventions needing to move beyond knowledge. With that said, the marginal significance of self-efficacy knowledge predicting self-efficacy indicates that knowledge could be an important factor, but it is not enough on its own. Future studies will need to examine the level of prediction with a larger sample size to determine if significance increases with a larger population.

Secondly, this study indicates a need for the measurement development of the differences in the psychological processes, of which self-efficacy is a proximate determinant. As discussed with research question 2, the knowledge of how the four sources of self-efficacy influence self-efficacy did not directly change SE levels; however, they potentially could influence selection processes. This is the area where individuals choose environments in which they want to perform or practice (Bandura, 2023). Individuals may choose easier environments where they know they will succeed or harder environments where they can test their skills. This study only measured sales SE and SE knowledge, leaving a gap in the understanding of the influence on future

psychological processes. Hence, the need for future longitudinal studies to be able to examine the long-term influences of the intervention on SE and psychological processes.

Lastly, research has been inconsistent on the self-efficacy differences between genders in salespeople (Dubinsky et al., 1993; Frino & Desiderio, 2013; Peterson & Crittenden, 2020; Ricks & Veneziano, 1998; Siguaw & Honeycutt, 1995). This research contributes to this discussion by finding a significant difference between genders, specifically using a sales self-efficacy scale. This prompts the need for additional research exploring influences, if any, in the sales domain that could influence gender differences such as in domains like mathematics (Usher & Pajares, 2008), culture (McInerney & King, 2018; Klassen, 2004), enterprising and realistic (Chew et al., 2002), or writing (Huang, 2013; Usher & Pajares, 2008). Previous research has primarily examined the relationship between sales performance and self-efficacy (Peterson, 2020); however, it has not examined whether gender is a moderator of this relationship. This study's findings on gender differences in self-efficacy contribute to this, but could be further supported by sales performance data.

Practical Implications

Sales is an essential component of business-to-business and business-to-consumer organizations. In 2022, the median sales organization spent between $1,000- $1,499 on training per salesperson, with 25% of salespeople not meeting their organization's sales goals (Association for Talent Development, 2023). Self-efficacy is widely acknowledged as being an important aspect of sales performance (Peterson, 2020); however, research has yet to determine the best practices for influencing and calibrating the SE of salespeople. This study contributes several implications for practitioners.

First, the findings of this study inform future training design by ensuring that they do not only seek to increase SE knowledge. While there may be a predictive nature of SE knowledge to SE, interventions would benefit by including opportunities for participants to experience mastery experiences, vicarious experiences, social persuasion, and physiological/emotional states. However, the knowledge of SE did not decrease SE, which indicates that there is no harm in discussing it.

The significant increase in SE knowledge after the intervention indicates the effectiveness of the training modality and content delivery. The intervention was designed by using instructional design principles such as Gagne's Nine Levels of Instruction (1965) and Bloom's Revised Taxonomy (Anderson & Krathwohl, 2001). The intervention was also designed to best fit the learner's profiles and needs. As salespeople, they can have fast-moving schedules that vary with the organization's needs, time of year, and client needs. The significant knowledge increase indicates that the modality and design were effective for the target audience and can be utilized for future sales training.

Lastly, the study's findings of the gender differences in SE can inform organizations' targeted training and coaching. Companies may assess their own staff's self-efficacy levels and develop one-on-one coaching opportunities and facilitate opportunities to gain mastery experiences, vicarious experiences, social persuasion, and physiological and emotional states. In addition, these could be tailored to the individual. For example, if providing opportunities for vicarious experiences, they should consider pairing people with individuals that they identify with, as this has been shown to increase SE (Bandura, 2023).

Limitations

While the study contributes theoretically and practically, it does have limitations. The current study had a small number of participants, limiting the generalizability to the larger population. Participants were selected from Prolific and CloudConnect, preventing the researcher from verifying that they fit the parameters of the target population outside of what was self-reported. Self-reporting can introduce bias and may have led to participants exaggerating their qualifications (DeVellis, 2021), which in turn could have influenced the data.

The study occurred over a two-week span, without a way to control for external interference. With a week occurring between the first posttest and the second posttest, there could have been external elements that influenced the second posttest (Creswell & Creswell, 2022). In an attempt to decrease threats of internal validity in the form of demand characteristics, the training's language aimed not to replicate specific language that was used in the SE levels measure; however, there is a small cross-over between the content and instrument language, which introduced a potential threat to internal validity (Orne, 1962). Similarly, posttest 1 was taken shortly after the pretest and short intervention; because the same measurements were used, the participants may have become familiar with the measurement and remembered previous responses and answered the same (Creswell & Creswell, 2020). Lastly, the study did not have a way to collect data on the amount of time participants spent taking the comparison and experimental courses. This data could have been used as a covariate to potentially further explain the results (Lomax & Hahs-Vaughn, 2012). Although this study has limitations, it also provides guidance for future research.

Future Directions

Future research should continue to further explore the gender differences in salespeople beyond this study. Previous research has studied salespeople's gender differences, but has shown

differing results, indicating that more research is needed (Dubinsky et al., 1993; Frino & Desiderio, 2013; Peterson & Crittenden, 2020; Ricks & Veneziano, 1998; Siguaw & Honeycutt, 1995). An understanding of gender differences can provide opportunities for targeted interventions aimed at leveling the SE between salespeople. In addition, these studies should explore the *why* of the gender differences, not only for understanding, but to best develop interventions for increased SE and sales performance.

Future studies would benefit from conducting a longitudinal study with a larger sample size. This would allow for further analysis on whether knowledge of SE is a predictor of SE in salespeople, since this study found a marginal significance. If knowledge is a significant predictor of SE, that would expand the opportunities for interventions to increase SE. As seen in this intervention, knowledge-based training can be implemented in shorter, targeted, and asynchronous approaches. These training approaches are more likely to fit within adult workers' professional schedules and lives. Adult workers have largely been ignored in SE intervention research. This study is a valuable start; however, conducting a longitudinal study with a larger sample size will provide more conclusive data. Which could then be used to enhance current adult worker training.

Self-efficacy researchers should examine methods to measure an individual's psychological selection processes, as well. These would be beneficial for future studies to analyze whether the knowledge of SE influences an individual's psychological selection processes or the environments they choose to participate in (Bandura, 2023). This would expand SE scales from not only assessing current states, but also enable researchers to measure and predict how SE may evolve based on interventions or other influences.

Conclusion

The goal of this research was to investigate the impact of an intervention that teaches SE as a concept on salespeople's SE and SE knowledge. The study found that the intervention significantly improved participants' SE knowledge in the experimental group, but did not significantly influence salespeople's SE. Additionally, knowledge of SE was not a statistically significant predictor of SE, despite showing marginal significance. Also, this study examined SE by age, gender, and experience, finding that salespeople with higher age and experience, and who identify as male, report higher SE, whereas females report lower SE. Overall, these findings indicate that while knowledge is not a significant statistical influencer of SE, SE knowledge and the gender differences in sales SE are worth investigating further. Salespeople and adult workers as a whole have been under researched in SE literature; however, future research could benefit from building upon this study.

References

Adams, K. (2004). Modelling success: enhancing international postgraduate research students' self-efficacy for research seminar presentations. Higher Education research & development, 23(2), 115-130.

Al-Darmaki, F. R. (2004). Counselor training, anxiety, and counseling self-efficacy: Implications for training psychology students from the United Arab Emirates University. Social Behavior and Personality: an international journal, 32(5), 429-439.

Al-Eisa, A. S., Furayyan, M. A., & Alhemoud, A. M. (2009). An empirical examination of the effects of self-efficacy, supervisor support and motivation to learn on transfer intention. *Management decision*, *47*(8), 1221-1244.

Allender, S., Cowburn, G., & Foster, C. (2006). Understanding participation in sport and physical activity among children and adults: a review of qualitative studies. Health education research, 21(6), 826-835.

Anderson-Bill, E. S., Winett, R. A., Wojcik, J. R., & Winett, S. G. (2011). Web-based guide to health: relationship of theoretical variables to change in physical activity, nutrition and weight at 16-months. Journal of medical Internet research, 13(1), e27. https://doi.org/10.2196/jmir.1614

Anderson, L. W., & Krathwohl, D. R. (2001). A taxonomy for learning, teaching, and assessing: A revision of Bloom's taxonomy of educational objectives: complete edition. Addison Wesley Longman, Inc..

Aronson, J., Fried, C. B., & Good, C. (2002). Reducing the effects of stereotype threat on African American college students by shaping theories of intelligence. *Journal of experimental social psychology*, *38*(2), 113-125.

Ashford, S., Edmunds, J., & French, D. P. (2010). What is the best way to change self-efficacy to promote lifestyle and recreational physical activity? A systematic review with meta-analysis. British journal of health psychology, 15(2), 265-288.

Association for Talent Development (2023). 2023 State of sales training. ASTD DBA Association for Talent Development Press.

Bailey, D. H., Duncan, G. J., Cunha, F., Foorman, B. R., & Yeager, D. S. (2020). Persistence and fade-out of educational-intervention effects: Mechanisms and potential solutions. Psychological Science in the Public Interest, 21(2), 55-97.

Baldwin, A.S., Rothman, A.J., Hertel, A.W., Linde, J.A., Jeffery, R.W., Finch, E.A., et al. (2006). Specifying the Determinants of the Initiation and Maintenance of Behavior Change: An Examination of Self-Efficacy, Satisfaction, and Smoking Cessation. Health Psychology, 25, 626-634.

Ballout, H. I. (2009). Career commitment and career success: moderating role of self-efficacy. Career Development International, 14. http://dx.doi.org/10.1108/13620430911005708

Bandura, A. (1983). Self-efficacy determinants of anticipated fears and calamities. *Journal of personality and social psychology*, *45*(2), 464.

Bandura, A. (1986). Social foundations of thought and action: A social cognitive theory. Englewood Cliffs, NJ: Prentice Hall.

Bandura, A. (1997). Self-Efficacy: The Exercise of Control. New York: Freeman.

Bandura, A. (2000). Exercise of human agency through collective efficacy. Current directions in psychological science, 9(3), 75-78.

Bandura, A. (2023). Social cognitive theory: An agentic perspective on human nature. John Wiley & Sons.

Bandura, A., Adams, N. E., & Beyer, J. (1977). Cognitive processes mediating behavioral change. Journal of Personality and Social Psychology, 35, 125–139.

Barbee, P. W., Scherer, D., & Combs, D. C. (2003). Pre practicum service-learning: Examining the relationship with counselor self-efficacy and anxiety. Counselor Education and Supervision, 43(2), 108-119.

Bauman, A. E, Reis R. S., Sallis, J. F., Wells, J. C., Loos, R. J. F., & Martin, B. W. (2012). Correlates of physical activity: why are some people physically active and others not? The Lancet, 380, 258-271. https://doi.org/10.1016/S0140-6736(12)60735-1

Bendapudi, N., & Leone, R. P. (2002). Managing business-to-business customer relationships following key contact employee turnover in a vendor firm. Journal of Marketing, 66(2), 83-101.

Betz, N. E., & Hackett, G. (1986). Applications of self-efficacy theory to understanding career choice behavior. Journal of Social and Clinical Psychology, 4, 279–289.

Boekaerts, M., & Rozendaal, J. S. (2010). Using multiple calibration indices in order to capture the complex picture of what affects students' accuracy of feeling of confidence. *Learning and Instruction*, *20*(5), 372-382.

Bostwick, K. C., Collie, R. J., Martin, A. J., & Durksen, T. L. (2017). Students' growth mindsets, goals, and academic outcomes in mathematics. *Zeitschrift für Psychologie*.

Brand, B. R., & Wilkins, J. L. (2007). Using self-efficacy as a construct for evaluating science and mathematics methods courses. Journal of Science Teacher Education, 18, 297-317.

Burnette, J. L., Russell, M. V., Hoyt, C. L., Orvidas, K., & Widman, L. (2018). An online growth mindset intervention in a sample of rural adolescent girls. *British Journal of Educational Psychology*, *88*(3), 428-445.

Campbell, D. T. (1963). Experimental and quasi-experimental designs for research on teaching. *Handbook of research on teaching*, *5*, 171-246.

Carver, C. S., & Scheier, M. F. (2001). Optimism, pessimism, and self-regulation.

Chen, C. C., Greene, P. G., & Crick, A. (1998). Does entrepreneurial self-efficacy distinguish entrepreneurs from managers?. Journal of business venturing, 13(4), 295-316.

Chen, K., Chen, J. V., & Yen, D. C. (2011). Dimensions of self-efficacy in the study of smart phone acceptance. *Computer Standards & Interfaces*, *33*(4), 422-431.

Cheung, W., Li, E. Y., & Yee, L. W. (2003). Multimedia learning system and its effect on self-efficacy in database modeling and design: an exploratory study. *Computers & Education*, *41*(3), 249-270.

Compte, O., & Postlewaite, A. (2004). Confidence-enhanced performance. American Economic Review, 94(5), 1536-1557.

Chew, I. K. H., Halim, H., & Matsui, T. (2002). Gender differences in career self-efficacy in Singapore. *Australian Journal of Career Development*, *11*(2), 30-37.

Chowdhury, J. (1993). The motivational impact of sales quotas on effort. *Journal of Marketing Research*, *30*(1), 28-41.

Cohen, J. (1988). Set correlation and contingency tables. *Applied psychological measurement*, *12*(4), 425-434.

Compte, O., & Postlewaite, A. (2004). Confidence-enhanced performance. *American Economic Review*, *94*(5), 1536-1557.

Creswell, J. W., & Creswell, J. D. (2022). Research design: Qualitative, quantitative, and mixed methods approaches. Sage publications.

Daniels, J. A., & Larson, L. M. (2001). The impact of performance feedback on counseling self-efficacy and counselor anxiety. Counselor Education and Supervision, 41(2), 120-130.

Day, R., & Allen, T. D. (2004). The relationship between career motivation and self-efficacy with protégé career success. Journal of Vocational Behavior, 64(1), 72-91. http://dx.doi.org/10.1016/S0001-8791(03)00036-8

Dempsey, M. S., PytlikZillig, L. M., & Bruning, R. H. (2009). Helping preservice teachers learn to assess writing: Practice and feedback in a Web-based environment. Assessing writing, 14(1), 38-61.

DeVellis, R. F., & Thorpe, C. T. (2021). *Scale development: Theory and applications*. Sage publications.

Dubinsky, A. J., Jolson, M. A., Michaels, R. E., Kotabe, M., & Lim, C. U. (1993). Perceptions of motivational components: salesmen and saleswomen revisited. *Journal of Personal Selling & Sales Management*, *13*(4), 25-37.

Dunning, D. (2011). The Dunning–Kruger effect: On being ignorant of one's own ignorance. In *Advances in experimental social psychology* (Vol. 44, pp. 247-296). Academic Press.

Dweck, C. S. (2008). Can personality be changed? The role of beliefs in personality and change. *Current directions in psychological science*, *17*(6), 391-394.

Dweck, C. S., & Master, A. (2009). Self-th eories and motivation: Students' beliefs about intelligence. In *Handbook of motivation at school* (pp. 137-154). Routledge.

Dweck, C. S., & Yeager, D. S. (2019). Mindsets: A view from two eras. Perspectives on Psychological Science, 14(3), 481–496. https://doi.org/10 .1177/1745691618804166

Ewijk, A. R. (2024). You say you can, but can you? The impact of entrepreneurship education on unwarranted and gendered entrepreneurial self-efficacy-a calibration study. *International Journal of Entrepreneurial Behavior & Research*.

Feltz, D. L., & Chase, M. A. (1998). The measurement of self-efficacy and confidence in sport. Advances in sport and exercise psychology measurement, 65-80.

Frese, M., Teng, E., & Wijnen, C. J. (1999). Helping to improve suggestion systems: Predictors of making suggestions in companies. Journal of Organizational Behavior, 20(7), 1139-1155.

Frino, M. G., & Desiderio, K. P. (2013). The Role of Demographics as Predictors of Successful Performance of Sales Professionals in Business-to-Business Sales Organizations. *Performance Improvement Quarterly*, *25*(4), 7-21.

Gagne, R. M. (1965). The analysis of instructional objectives for the design of instruction. *Teaching machines and programmed learning II: Data and directions*, 21-65.

Gaumer Erickson, A. S., & Noonan, P. M. (2018). Self-efficacy formative questionnaire. *The skills that matter: Teaching interpersonal and intrapersonal competencies in any classroom*, 175-176.

Ghafoor, A., Qureshi, T. M., Azeemi, H. R., & Hijazi, S. T. (2011). Mediating role of creative self-efficacy. African Journal of Business Management, 5, 11093-11103.

Girolametto, L., Weitzman, E., & Greenberg, J. (2004). The effects of verbal support strategies on small-group peer interactions.

Govaere, J., A. de Kruif, and M. Valcke. (2012). "Differential Impact of Unguided Versus Guided Use of a Multimedia Introduction to Equine Obstetrics in Veterinary Education." Computers and Education 58: 1076–84.

Greenhouse, S. W., & Geisser, S. (1959). On methods in the analysis of profile data. *Psychometrika*, *24*(2), 95-112.

Gunning, A. M., & Mensah, F. M. (2011). Preservice elementary teachers' development of self-efficacy and confidence to teach science: A case study. Journal of Science Teacher Education, 22(2), 171-185.

Gurvitch, R., & Metzler, M. W. (2009). The effects of laboratory-based and field-based practicum experience on pre-service teachers' self-efficacy. Teaching and teacher education, 25(3), 437-443.

Hacker, D. J., Bol, L., Horgan, D. D., & Rakow, E. A. (2000). Test prediction and performance in a classroom context. *Journal of Educational Psychology*, *92*(1), 160.

Hagermoser Sanetti, L. M., & Fallon, L. M. (2011). Treatment integrity assessment: How estimates of adherence, quality, and exposure influence interpretation of implementation. *Journal of Educational and Psychological Consultation*, *21*(3), 209-232.

Haimovitz, K., Wormington, S. V., & Corpus, J. H. (2011). Dangerous mindsets: How beliefs about intelligence predict motivational change. *Learning and Individual Differences*, *21*(6), 747-752.

Harris, L., & Jones, M. G. (2021). Measuring Student Learning. Design for Learning: Principles, Processes, and Praxis. https://edtechbooks.org/id/measuring_student_learning

Hendriksen, E.S., Pettifor, A., Lee, S.-J., Coates, T.J., & Rees, H.V. (2007). Predictors of Condom Use Among Young Adults in South Africa: The Reproductive Health and HIV Research Unit National Youth Survey. American Journal of Public Health, 97, 1241-1248.

Heward, W. L., Alber-Morgan, S. R., & Konrad, M. (2017). Exceptional children: An introduction to special education. Boston: Pearson Education.

Huang, C. (2013). Gender differences in academic self-efficacy: A meta-analysis. *European journal of psychology of education*, *28*(1), 1-35.

Jaeken, M., Zech, E., Brison, C., Verhofstadt, L. L., Van Broeck, N., & Mikolajczak, M. (2017). Helpers' self-assessment biases before and after helping skills training. *Frontiers in psychology*, *8*, 1377

Jex, S. M., & Bliese, P. D. (1999). Efficacy beliefs as a moderator of the impact of work-related stressors: a multilevel study. Journal of applied psychology, 84(3), 349.

Jex, S. M., & Bliese, P. D. (1999). Efficacy beliefs as a moderator of the impact of work-related stressors: a multilevel study. Journal of applied psychology, 84(3), 349.

Jorde-Bloom, P., & Ford, M. (1988). Factors influencing early childhood administrators' decisions regarding the adoption of computer technology. Journal of Educational Computing Research, 4(1), 31-47.

Judge, T. A., & Bono, J. E. (2001). Relationship of core self-evaluations traits - selfesteem, generalized self-efficacy, locus of control, and emotional stability - with job satisfaction and job performance: A meta-analysis. Journal of Applied Psychology, 86(1), 80-92. http://dx.doi.org/10.1037/0021-9010.86.1.80

Kashinath, S., Woods, J., & Goldstein, H. (2006). Enhancing generalized teaching strategy use in daily routines by parents of children with autism.

Kent, G. (1987). Self-efficacious control over reported physiological, cognitive and behavioural symptoms of dental anxiety. Behaviour Research and Therapy, 25, 341–347.

Klassen, R. M. (2004). A cross-cultural investigation of the efficacy beliefs of South Asian immigrant and Anglo Canadian nonimmigrant early adolescents. *Journal of Educational Psychology*, *96*(4), 731.

Klassen, R. M., & Usher, E. L. (2010). Self-efficacy in educational settings: Recent research and emerging directions. The decade ahead: Theoretical perspectives on motivation and achievement, 16, 1-33.

Kim, Y., A. L. Baylor, and E. Shen. (2007). "Pedagogical Agents as Learning Companions: The Impact of Agent Emotion and Gender." Journal of Computer Assisted Learning 23: 220–34.

Knowles, M. S. (1984). Theory of andragogy. *A Critique. International Journal of Lifelong. Cambridge MA*.

Lackaye, T., Margalit, A. M., Ziv, O., & Ziman, T. (2006). Comparisons of self-efficacy, mood, effort, and hope between students with learning disabilities and their non-LDmatched peers. Learning Disabilities Research and Practice, 21, 111–121.

Lent, R. W., Brown, S. D., & Hackett, G. (1994). Toward a unifying social cognitive theory of career and academic interest, choice, and performance. Journal of vocational behavior, 45(1), 79-122.

Leon-Perez, J. M., Medina, F. J., & Munduate, L. (2011). Effects of self-efficacy on objective and subjective outcomes in transactions and disputes. International Journal of Conflict Management, 22. http://dx.doi.org/10.1108/10444061111126693

Locke, E. A., Frederick, E., Lee, C., & Bobko, P. (1984). Effect of self-efficacy, goals, and task strategies on task performance. *Journal of applied psychology*, *69*(2), 241.

Locke, E. A., & Latham, G. P. (2002). Building a practical theory of goal setting and task motivation: A 35-year odyssey. American Psychologist, 57, 705–717.

Locke, E. A., & Latham, G. P. (2015). Breaking the rules: A historical overview of goal setting theory. In A. J. Elliot (Ed.), Vol. 2. Advances in motivation science (pp. 99–126). Oxford, UK: Elsevier

Lomax, R., & Hahs-Vaughn, D. (2012). Statistical Concepts (Vol. 3rd).

Mabe, P. A., & West, S. G. (1982). Validity of self-evaluation of ability: A review and meta-analysis. *Journal of applied Psychology*, *67*(3), 280.

Macaskill, A., and A. Denovan. 2013. "Developing Autonomous Learning in First Year University Students Using Perspectives From Positive Psychology." Studies in Higher Education 38 (1): 124–42.

Magnus, J. R., & Peresetsky, A. A. (2018). Grade expectations: Rationality and overconfidence. *Frontiers in psychology*, *8*, 2346.

Major, A., Martinussen, R., & Wiener, J. (2013). Self-efficacy for self-regulated learning in adolescents with and without attention deficit hyperactivity disorder (ADHD). Learning and Individual Differences, 27, 149–156.

Mallin, M. L., Jones, D. E., & Cordell, J. L. (2010). The impact of learning context on intent to use marketing and sales technology: A comparison of scenario-based and task-based approaches. Journal of Marketing Education, 32(2), 214-223.

Markman, G. D., & Baron, R. A. (2003). Person–entrepreneurship fit: why some people are more successful as entrepreneurs than others. Human resource management review, 13(2), 281-301.

Maurer, T. J., & Andrews, K. D. (2000). Traditional, Likert, and simplified measures of self-efficacy. *Educational and Psychological Measurement*, *60*(6), 965-973.

McDonnough, J. T., & Matkins, J. J. (2010). The role of field experience in elementary preservice teachers' self-efficacy and ability to connect research to practice. School Science and Mathematics, 110(1), 13-23.

McDonald, T., & Siegall, M. (1992). The effects of technological self-efficacy and job focus on job performance, attitudes, and withdrawal behaviors. The Journal of Psychology, 126(5), 465-475.

McInerney, D. M., & King, R. B. (2018). Culture and self-regulation in educational contexts. In D. H. Schunk, & J. A. Greene (Eds.), Handbook of self-regulation of learning and performance (2nd ed., pp. 485–502). New York: Routledge.

Muenks, K., Wigfield, A., & Eccles, J. S. (2018). I can do this! The development and calibration of children's expectations for success and competence beliefs. *Developmental Review*, *48*, 24-39.

Myers, N. D., & Feltz, D. L. (2007). From self-efficacy to collective efficacy in sport. *Handbook of sport psychology*, 799-819.

Myers, N. D., McMahon, A., Prilleltensky, I., Lee, S., Dietz, S., Prilleltensky, O., & Brincks, A. M. (2020). Effectiveness of the fun for wellness web-based behavioral intervention to promote physical activity in adults with obesity (or overweight): Randomized controlled trial. JMIR formative research, 4(2), e15919. https://doi.org/10.2196/15919.

Niu, H. (2010). Erratum to & ldquo; Investigating the effects of self-efficacy on foodservice industry employees & rsquo; career commitment. International Journal of hospitality Management, 29, 1336. http://dx.doi.org/10.1016/j.ijhm.2010.03.006

Oei, T.P.S., & Burrow, T. (2000). Alcohol expectancy and drinking refusal self-efficacy: A test of specificity theory. Addictive Behaviors, 25, 499-507.

Oettingen, G., & Gollwitzer, P. M. (Eds.). (2015). *Self-regulation in Adolescence*. Cambridge University Press.

Olander, E.K., Fletcher, H., Williams, S. et al. (2013) What are the most effective techniques in changing obese individuals' physical activity self-efficacy and behaviour: a systematic review and meta-analysis. Int J Behav Nutr Phys Act 10, 29 https://doi.org/10.1186/1479-5868-10-29

Olusola, O. (2011). Intinsic Motivation, Job Satisfaction And Self-Efficacy As Predictors Of Job Performance Of Industrial Workers In Ijebu Zone Of Ogun State. The Journal of International Social Research, 4.

Orne, M. T. (2009). Demand characteristics and the concept of quasi-controls. *Artifacts in behavioral research: Robert Rosenthal and Ralph L. Rosnow's classic books*, *110*, 110-137.

Pajares, F. (2002). Gender and perceived self-efficacy in self-regulated learning. *Theory into practice*, *41*(2), 116-125.

Pan, W., Sun, L., & Chow, I. H. (2011). The impact of supervisory mentoring on personal learning and career outcomes: The dual moderating effect of self-efficacy. Journal of Vocational Behavior, 78, 264-273. http://dx.doi.org/10.1016/j.jvb.2010.05.001

Papastergiou, M. (2010). Enhancing physical education and sport science students' self-efficacy and attitudes regarding information and communication technologies through a computer literacy course. Computers & Education, 54(1), 298-308.

Paunesku, D., Walton, G. M., Romero, C., Smith, E. N., Yeager, D. S., & Dweck, C. S. (2015). Mind-set interventions are a scalable treatment for academic underachievement. Psychological Science, 26(6), 784–793. https://doi.org/10.1177/0956797615571017

Perloff, R. M. (1993). The dynamics of persuasion. Hillsdale, NJ, England: Lawrence Erlbaum Associates, Inc.

Peterson, R. A. (2020). Self-efficacy and personal selling: review and examination with an emphasis on sales performance. *Journal of Personal Selling & Sales Management*, *40*(1), 57-71.

Peterson, R. A., & Crittenden, V. L. (2020). On the relationship between self-efficacy and sales/job performance: Does gender matter?. *Journal of Selling*, *20*(2), 5-16.

Prestwich, A., Kellar, I., Parker, R., MacRae, S., Learmonth, M., Sykes, B., Castle, H. (2014). How can self-efficacy be increased? Meta-analysis of dietary interventions. Health Psychology Review, 8(3), 270-285. doi:10.1080/17437199.2013.813729

Relich, J. D., Debus, R. L., & Walker, R. (1986). The mediating role of attribution and self-efficacy variables for treatment effects on achievement outcomes. *Contemporary Educational Psychology*, *11*(3), 195-216.

Richardson, M., Abraham, C., & Bond, R. (2012). Psychological correlates of university students' academic performance: a systematic review and meta-analysis. *Psychological bulletin*, *138*(2), 353.

Rice, D. C., & Roychoudhury, A. (2003). Preparing more confident preservice elementary science teachers: One elementary science methods teacher's self-study. Journal of Science Teacher Education, 14(2), 97-126.

Ricks, J., & Veneziano, L. (1998). The effect of gender and selected personality traits on objective and subjective measures of sales performance. *Marketing Management Journal*, *8*(2).

Romano, M., & Woods, J. (2018). Collaborative coaching with early head start teachers using responsive communication strategies. Topics in Early Childhood Special Education, 38(1), 30-41.

Sallis, J.F., Haskell, W.L., Fortmann, S.P., Vranizan, K.M., Taylor, C.B., Soloman D.S. (1986). Predictors of adoption and maintenance of physical activity in a community sample. Preventive Medicine, 15, 331-341.

Sallis, J.F., Hovell, M.F., Hofstetter, C.R. (1992). Predictors of adoption and maintenance of vigorous physical activity in men and women. Preventive Medicine, 21, 237-251.

Sanetti, L. M., Cook, B. G., & Cook, L. (2021). Treatment fidelity: What it is and why it matters. *Learning Disabilities Research & Practice*, *36*(1), 5-11.

Scheier, M. F., Carver, C. S., & Bridges, M. W. (2001). Optimism, pessimism, and psychological well-being.

Schneider, M., & Preckel, F. (2017). Variables associated with achievement in higher education: A systematic review of meta-analyses. Psychological bulletin, 143(6), 565.

Schunk, D. H. (1981). Modeling and attributional effects on children's achievement: A self-efficacy analysis. *Journal of educational psychology*, *73*(1), 93.

Schunk, D. H., & Pajares, F. (2004). Self-efficacy in education revisited. *Big theories revisited*, *4*, 115-138.

Schunk, D. H., & DiBenedetto, M. K. (2016). Self-efficacy theory in education. In K. R. Wentzel, & D. B. Miele (Eds.), Handbook of motivation at school (2nd ed., pp. 34–53). New York: Routledge.

Schunk, D. H., & Hanson, A. R. (1985). Peer models: Influence on children's self-efficacy and achievement. *Journal of educational psychology*, *77*(3), 313.

Schunk, D. H., & DiBenedetto, M. K. (2020). Motivation and social cognitive theory. Contemporary educational psychology, 60, 101832.

Schunk, D. H., & DiBenedetto, M. K. (2020a). Motivation and social cognitive theory. Contemporary Educational Psychology, 60. article no. 101832

Schunk, D. H., & DiBenedetto, M. K. (2021). Self-efficacy and human motivation. In *Advances in motivation science* (Vol. 8, pp. 153-179). Elsevier.

Schunk, D. H., & Hanson, A. R. (1985). Peer models: Influence on children's self-efficacy and achievement. Journal of educational psychology, 77(3), 313.

Schlösser, T., Dunning, D., Johnson, K. L., & Kruger, J. (2013). How unaware are the unskilled? Empirical tests of the “signal extraction” counter explanation for the Dunning–Kruger effect in self-evaluation of performance. *Journal of Economic Psychology*, *39*, 85-100.

Schraw, G. (2009). A conceptual analysis of five measures of metacognitive monitoring. *Metacognition and learning*, *4*, 33-45.

Scott, T. M., Gage, N. A., Hirn, R. G., Lingo, A. S., & Burt, J. (2019). An examination of the association between MTSS implementation fidelity measures and student outcomes. *Preventing School Failure: Alternative Education for Children and Youth*, *63*(4), 308-316.

Scheier, M. F., Carver, C. S., & Bridges, M. W. (2001). Optimism, pessimism, and psychological well-being. In E. C. Chang (Ed.), *Optimism & pessimism: Implications for theory, research, and practice* (pp. 189–216). American Psychological Association. https://doi.org/10.1037/10385-009

Schneider, M., & Preckel, F. (2017). Variables associated with achievement in higher education: A systematic review of meta-analyses. *Psychological bulletin*, *143*(6), 565.

Shaw, R.-S. 2010. "A Study of Learning Performance of e-Learning Materials Design with Knowledge Maps." Computers and Education 54: 253–64.

Siguaw, J. A., & Honeycutt Jr, E. D. (1995). An examination of gender differences in selling behaviors and job attitudes. *Industrial Marketing Management*, *24*(1), 45-52.

Sitzmann, T., & Yeo, G. (2013). A meta-analytic investigation of the within-person self-efficacy domain: Is self-efficacy a product of past performance or a driver of future performance? Personnel Psychology, 66, 531–568. https://doi .org/10.1111/peps.12035

Snyder, M. (1980). Seek, and ye shall find: Testing hypotheses about other people. In E. T. Higgins, C. P. Herman, & M. P. Zanna (Eds.), Social cognition: The Ontario symposium on personality and social psychology (Vol. 1, pp. 105–130). Hillsdale, NJ: Erlbaum.

Speier, C., & Frese, M. (2014). Generalized self-efficacy as a mediator and moderator between control and complexity at work and personal initiative: A longitudinal field study in East Germany. In Organizational Citizenship Behavior and Contextual Performance (pp. 171-192). Psychology Press.

Stankov, L., & Lee, J. (2014). Quest for the best non-cognitive predictor of academic achievement. *Educational Psychology*, *34*(1), 1-8.

Staples, D. S., Hulland, J. S., & Higgins, C. A. (1998). A self-efficacy theory explanation for the management of remote workers in virtual organizations. Journal of computer-mediated communication, 3(4), JCMC342.

Sujan, H., Weitz, B. A., & Kumar, N. (1994). Learning orientation, working smart, and effective selling. *Journal of marketing*, *58*(3), 39-52.

Sweller, J. (1994). Cognitive load theory, learning difficulty, and instructional design. *Learning and instruction*, *4*(4), 295-312.

Tabachnick, B. G., & Fidell, L. S. (2025). Multivariate analysis of variance (MANOVA). In *International encyclopedia of statistical science* (pp. 1616-1619). Berlin, Heidelberg: Springer Berlin Heidelberg.

Talsma, K., Schüz, B., Schwarzer, R., & Norris, K. (2018). I believe, therefore I achieve (and vice versa): A meta-analytic cross-lagged panel analysis of self-efficacy and academic performance. Learning and Individual Differences, 61, 136–150. https://doi.org/10.1016/j.lindif.2017.11.015

Taylor, M. S., Locke, E. A., Lee, C., & Gist, M. E. (1984). Type A behavior and faculty research productivity: What are the mechanisms? Organizational Behavior and Human Performance, 34, 402–418.

Tomarken, A. J., & Serlin, R. C. (1986). Comparison of ANOVA alternatives under variance heterogeneity and specific noncentrality structures. *Psychological Bulletin*, *99*(1), 90.

Turhan, N. S. (2020). Karl pearson's chi-square tests. *Educational Research and Reviews*, *16*(9), 575-580.

Usher, E. L., & Pajares, F. (2008). Sources of self-efficacy in school: Critical review of the literature and future directions. Review of Educational Research, 78, 751–796. https://doi. org/10.3102/0034654308321456.

Usher, E. L., & Schunk, D. H. (2017). Social cognitive theoretical perspective of self-regulation. In *Handbook of self-regulation of learning and performance* (pp. 19-35). Routledge.

Valentine, J. C., DuBois, D. L., & Cooper, H. (2004). The relation between self-beliefs and academic achievement: A meta-analytic review. *Educational psychologist*, *39*(2), 111-133.

Vancouver, J. B., Thompson, C. M., Tischner, E. C., & Putka, D. J. (2002). Two studies examining the negative effect of self-efficacy on performance. *Journal of applied psychology*, *87*(3), 506

Vancouver, J. B., Thompson, C. M., & Williams, A. A. (2001). The changing signs in the relationships among self-efficacy, personal goals, and performance. *Journal of applied psychology*, *86*(4), 605

Wang, L., Ertmer, P. A., & Newby, T. J. (2004). Increasing preservice teachers' self-efficacy beliefs for technology integration. Journal of research on technology in education, 36(3), 231-250.

Weinberg, R. S., Gould, D., & Jackson, A. (1979). Expectations and performance: An empirical test of Bandura's self-efficacy theory. Journal of Sport Psychology, 1, 320–331.

Weinberg, R. S., Yukelson, D., & Jackson, A. (1980). Effect of public and private efficacy expectations on competitive performance. Journal of Sport Psychology, 2(4), 340–349.

Wickens, T. D., & Keppel, G. (2004). *Design and analysis: A researcher's handbook* (p. 958). Upper Saddle River, NJ: Pearson Prentice-Hall.

Wigfield, A., Muenks, K., & Eccles, J. S. (2021). Achievement motivation: What we know and where we are going. *Annual Review of Developmental Psychology*, *3*(1), 87-111.

Wise, J. B., & Trunnell, E. P. (2001). The influence of sources of self-efficacy upon efficacy strength. Journal of Sport and Exercise Psychology, 23(4), 268-280.

Wood, R. E., & Bandura, A. (1989a). Social cognitive theory of organizational management. Academy of Management Review, 14, 361–384.

Wood, R. E., & Bandura, A. (1989b). Impact of conceptions of ability on self-regulatory mechanisms and complex decision making. Journal of Personality and Social Psychology, 5(3), 407–415.

Wright, J., & Mischel, W. (1982). Influence of affect on cognitive social learning person variables. *Journal of Personality and Social Psychology*, *43*(5), 901.

Wright, J., & Mischel, W. (1982). Influence of affect on cognitive social learning person variables. *Journal of Personality and Social Psychology*, *43*(5), 901.

Yeager, D. S., Hanselman, P., Walton, G. M., Murray, J. S., Crosnoe, R., Muller, C., Tipton, E., Schneider, B., Hulleman, C. S., Hinojosa, C. P., Paunesku, D., Romero, C., Flint, K., Roberts, A., Trott, J., Iachan, R., Buontempo, J., Yang, S. M., Carvalho, Dweck, C. S. (2019). A national experiment reveals where a growth mindset improves achievement. Nature, 573(7774), 364–369. https://doi.org/10.1038/s41586-0191466-y

Zimmerman, B. J., & Ringle, J. (1981). Effects of model persistence and statements of confidence on children's self-efficacy and problem solving. Journal of Educational Psychology, 73(4), 485.

Zimmerman, B. J., and A. Kitsantas. 2002. “Acquiring Writing Revision and Self-regulatory Skill Through Observation and Emulation.” Journal of Educational Psychology 94 (4): 660–68.

Zoltners, A. A., Sinha, P., & Lorimer, S. E. (2008). Sales force effectiveness: a framework for researchers and practitioners. Journal of Personal Selling & Sales Management, 28(2), 115-131.

Appendix A

Personal Selling Domain SE Measure (Sujan et al., 1994)

1. I am good at selling.
2. It is difficult for me to put pressure on a customer. (R)
3. I know the right thing to do in selling situations.
4. I find it difficult to convince a customer that has a different viewpoint than mine. (R)
5. My temperament is not well-suited for selling. (R)
6. I am good at finding out what customers want.
7. It is easy for me to get customers to see my point of view

7-point Likert Scale ranging from “strongly disagree” to “strongly agree”.

* (R) denotes a reverse-worded item

Appendix B

SE Knowledge Assessment Questionnaire

1. What is the definition of self-efficacy?
   - Confidence in your general intelligence
   - **Belief in your ability to perform a specific task**
   - Motivation to complete a goal
   - Persistence in the face of failure

2. Which situation is an example of high self-efficacy in sales?
   - A salesperson avoids reaching out to a new client because they assume they will fail.
   - **A salesperson feels confident about preparing for a tough client meeting and commits to making the call.**
   - A salesperson believes success depends only on luck and avoids setting goals.
   - A salesperson quits after the first client rejection.

3. Which situation is an example of low self-efficacy in sales?
   - A salesperson avoids reaching out to a new client because they assume they will fail.
   - A salesperson feels confident about preparing for a tough client meeting and commits to making the call.
   - **A salesperson believes success depends only on luck and avoids setting goals.**
   - A salesperson quits after the first client rejection.

4. How does self-efficacy influence task choice?
   - **High self-efficacy leads people to select more challenging tasks.**
   - High self-efficacy causes people to avoid difficult tasks.
   - Low self-efficacy guarantees failure at any task.
   - Task choice is not related to self-efficacy.

5. How does self-efficacy influence effort and engagement?
   - High self-efficacy reduces effort because people feel overconfident.
   - Low self-efficacy increases effort because people feel they must prove themselves.
   - **High self-efficacy increases both effort and depth of engagement.**
   - Effort and engagement are unaffected by self-efficacy.

6. How does self-efficacy influence persistence?
   - **People with high self-efficacy are more likely to persist when facing challenges.**
   - People with low self-efficacy always persist through obstacles.
   - Persistence is unrelated to self-efficacy.
   - High self-efficacy causes people to quit faster because they feel less pressure.

7. A salesperson believes strongly in their ability to succeed with a difficult client. According to self-efficacy, they are most likely to:

- Avoid the client to prevent possible failure
- **Put in more effort and remain engaged during the sales process**
- Give up quickly if the first attempt is unsuccessful
- Seek only easy clients to guarantee success

8. Which factor has the strongest influence on self-efficacy?

- Vicarious experiences
- Social persuasion
- Physiological and emotional states
- **Post mastery experiences**

9. Observing a peer successfully completing a task most directly relates to which influence on self-efficacy?

- Post mastery experience
- **Vicarious experience**
- Social persuasion
- Physiological state

10. Which practice demonstrates applying self-efficacy theory to personal development?

- **Documenting small and large personal wins**
- Avoiding challenging tasks to reduce stress
- Ignoring past failures when planning future tasks
- Focusing only on external rewards

** Correct answers denoted in bold*

Appendix C

Intervention Content/Script

Content Outline

- Introduction
- What is it?
- Why is it important?
- How can you use it?
- Examples
- Conclusion

Module 1: Introduction

You are faced with a sale that you are not entirely sure how you are going to accomplish, you don't know if you can. You want to, but you just don't know how you are going to do. How does that impact your ability to close the sale?

The overall purpose of this course is to increase your knowledge of the motivational theory of self-efficacy in order to apply new skills to your life and work.

Objectives:

1. *Define self-efficacy*
2. *Explain the three ways self-efficacy influences behavior*
3. *Explain the different factors that influence self-efficacy*
4. *Determine ways to utilize self-efficacy*

*Open-ended Response Text Box**:** Grab a pad of paper, open a doc, open a text file, however you like best document your thoughts. Throughout this course, you will be provided with prompts to journal. This is free form! Journal in any style that fits best for you but make sure to do it. This will not be shown to anyone else unless you want it* to.

Module 2: What is self-efficacy?

Let's dive right in! We could go deep in the weeds about the definition of self-efficacy but the root of it is this…

Self-efficacy is an individual's belief in their ability to perform well at a specific task.

So basically, how well do you think you are going to do on something? For example, there is an assessment at the end of this course. How are you feeling you are going to do on it right now? Good? Bad? Somewhere in between? That's okay, whatever it is, but that is your self-efficacy.

Let's pause for a moment and reflect. What was the last time you were presented with a task? This could have been a sale. A test. A DIY project, anything. How did you feel you were going to do on it? Good? Bad?

You can have high or low self-efficacy and your ability to perform well may be accurate or inaccurate. Your belief may or may not be true but it does impact a lot. Let's talk about those. Your self-efficacy impacts motivation, engagement, and emotion.

Self-efficacy is simple to state but complex to understand. It has many components and influencing factors but when you understand ways to improve your self-efficacy it has great payoffs.

Now that we know what self-efficacy is, we can begin discussing why it is important.

Journal prompt: When was a time that you could identify self-efficacy occurring in your life? It does not have to be sales specific.

Module 3: How does it influence?

Your hands are sweaty. You are facing negative self-talk, and you're thinking about the past times you haven't performed well. Sound familiar? These are all items that influence your self-efficacy. And understanding how they influence your self-efficacy can help you improve it and ultimately help you perform higher.

But, why?

It is not only important to know what self-efficacy is but how it influences us and what influences it.

Self-efficacy influences behavior in three ways:

(accordion table with dropdowns of examples)

1. *Task choice and willingness to try*
    a. *The higher self-efficacy the more challenging task you will choose (good!), the lower the self-efficacy, you will pick a low challenging task or the hardest task so if you fail it will be because it was too hard and not your ability (not so good!)*
    b. *The higher self-efficacy the more willing you will be to try*
2. *Effort and engagement*
    . *The more self-efficacy you have the more effort you will put in*
    a. *The higher self-efficacy you have the more deeply you will engage with something*
3. *Persistence in the face of value*
    a. *If you have low self-efficacy you will give up, high self-efficacy you will fight through the challenge*

Think about a time when you were influenced by one of these three things. How did that impact you?

(breakout box)
*A **positive sense of self-efficacy** is a foundation for **experiencing intrinsic motivation** (internal drive) and **internalizing others' extrinsic** (external influences on motivation) **goals and values.***

Now, we have discussed several ways that self-efficacy influences US but what influences self-efficacy? There are several items. Turn the cards over below to learn about the 4 items influencing self-efficacy.

(card interaction)

- *Post mastery experience*
  - *Previous successes and failures*
- *Vicarious experiences*
  - *Observation of others' successes and failures*
- *Social persuasion*
  - *Others trying to convince you that we can or cannot do something*
- *Physiological and emotional states*
  - *Mood and stress are pieces of information. Heart rate and other feelings get interpreted*

It is good to note that while all four of these are important influences, post mastery experience has the highest level of influence on self-efficacy.

This is a lot of whats, but let's jump into some of the hows. How can you use it to improve your life and work?

Journal prompt: What are examples you have of the 4 influencing factors to self-efficacy? Have you felt anymore more regularly than the others? If so, why do you think that may be?

Module 4: How can you use it?

It is not only important to know about self-efficacy, but how to use it. The list below details a few tips and tricks you can do to improve your self-efficacy.

1. *Document your wins! Think about the times in the past you have been successful and document that alongside the daily wins you have.*
2. *Look for people who have successfully completed the task around you. Seek out role models and learn from their experiences.*
3. *Seek feedback! Give yourself praise when completing a task.*
4. *Practice meditation or other breathing exercises to lower your heart rate and anxiety. Think about the reasons you enjoy your job or the tasks you are doing.*

Examples

- *Think about a time when you have high efficacy*
    - *How do you feel when you have to do this task?*
    - *Are you engaged?*
    - *How much effort do you put into the task?*
    - *How persistent are you when you struggle?*
- *Think about a time when you have low efficacy*
    - *How do you feel when you have to do this task?*
    - *Are you engaged?*
    - *How much effort do you put into the task?*
    - *How persistent are you when you struggle?*

Journal prompt: Where do you see areas in your life that you can use self-efficacy?

Module 5: Conclusion

And that's a wrap!

Remember, self-efficacy is an individual's belief in their ability to perform well at a specific task. So really, how well do you think you are going to do at something? We covered the ways that self-efficacy can influence behavior, what influences self-efficacy, and the ways that you can utilize self-efficacy to be a stronger salesperson.

Journal prompt: How do you think self-efficacy can be used in your sales work? Your life?

Appendix D

Comparison Training Content/Script

Content Outline

- Introduction
- What is Gen AI?
- What does Gen AI do?
- How can you use Gen AI?
- Conclusion
- What's Next?

Module 1: Introduction

The overall purpose of this course is to increase your knowledge of generative artificial intelligence (gen AI) in order to apply new skills to your life and work.

Objectives:

1. *Define generative artificial intelligence*
2. *Explain the different factors that inform GenAI*
3. *Determine ways to utilize GenAI in sales*

*Open-ended Response Text Box**:** Grab a pad of paper, open a doc, open a text file, however you like best document your thoughts. Throughout this course, you will be provided with prompts to journal. This is free form! Journal in any style that fits best for you but make sure to do it. This will not be shown to anyone else unless you want it* to.

Module 2: What is self-efficacy?

Let's dive right in! We could go deep in the weeds about the definition of generative artificial intelligence (Gen AI) but the root of it is this…

*AI that can create **original content** in **response to a user's request**.*

Gen AI mimics the learning and decision-making processes of the human brain through machine learning models known as deep-learning models. They identify patterns in mass amounts of data and use it to respond to a user's request in order to respond with new content.

*Gen AI is simple to state but complex to understand. It has many components and influencing factors but **when you understand ways to utilize gen AI it has great pay-offs.***

Now that we know what gen AI is we can begin discussing why it is important.

Journal prompt: When was a time that you could identify needing help crafting an email, developing audio, or needing a specific image tailored to you?

Module 3: How does it influence?

It is not only important to know what Gen AI is but how it contributes to us and what trains it.

Gen AI has many uses and can be utilized in complex ways, however there are a few areas that Gen AI is known for.

(accordion table with dropdowns of examples)

1. *Text*
    a. *Gen AI can craft coherent and relevant text*
    b. *This can range from rewording an email to taking complex instruction manuals and transforming them into easy to understand directions*
2. *Images and Videos*

    a. *Gen AI can turn user prompts into realistic images, add effects to videos, as well as create animations*

3. *Sound, Speech, and Music*
    a. *Gen AI can take natural sounding speech and turn it into voice-enabled chatbots*
    b. *It can create narration from text and turn it into well-read audio*
    c. *Gen AI can create original music established from patterns of original compositions*
4. *Software Code*
    a. *Gen AI can develop original code or translate codes from one programming language to another*
    b. *This allows developers to test and debug easily and efficiently*

(breakout box)

*Gen AI is meant to **assist human creators**, allowing them more time to focus on items they need, **not to replace them**.*

Now, we have discussed several ways that we can use Gen AI but how does Gen AI learn?

Turn the cards over below to learn about a few ways Gen AI is trained.

(card interaction)

- *Massive Datasets*
  - *Data includes text, images, audio, and others which are mostly gathered from the internet.*
- *Neural Networks*
  - *These networks identify patterns and relationships within data.*
- *Human Feedback*
  - *Gen AI requires human feedback to to fine tune.*

Journal prompt: Think about a time when you needed to develop one of these items? How would it have helped you to have Gen AI?

Module 4: How can you use it?

It is not only important to know about Gen AI, but how it can benefit you. The list below details a few tips and tricks you can use Gen AI for.

1. *Crafting text (difficult emails, manuals, job-aids, contracts, etc).*
2. *Brainstorming new ideas or using it as a thought partner when working through a difficult task.*
3. *Needing visual art to showcase projects or complex ideas.*

Journal prompt: Where do you see areas in your life or career that you can use Gen AI moving forward?

Module 5: Conclusion

And that's a wrap!

We covered the ways that Gen AI can be used, how Gen AI is trained, and how you can utilize Gen AI in your role.

Journal prompt: Do you think Gen AI is a useful tool?